THE

SOUTHERN AGRICULTURIST.

OCTOBER, 1839.

PART I.

EDITORIAL AND ORIGINAL.

Early Ploughing for Corn on clay or flat Lands.

" Barnwell, Sept. 1830.

Dear Sir,—In the middle districts a white ploughman can attend thirty of light, and twenty-five acres of stiff, or swamp land in corn. The quantity of stiff land planted depends on its early breaking up in the winter; to do which, able ploughmen are generally employed: but for the working of the crop, boys or girls fifteen or sixteen years old are equal to whole hands. It is my opinion, pardon me for saying so, that when you fail in your parish to make good crops of corn, during a moderate season, your lands have not been *well* prepared; for I have seen none any where in the lower country, better adapted to the corn culture. You have a climate two weeks in advance of ours—more moist, and as many think, more stimulating to plants: and with these advantages, your plantations should in every sense of the word, become the *granaries* of Charleston. Yet some of your neighbors complain. Why, let me ask? The cause of your failure, I think you will learn, when I tell you how the middle country farmer *plants corn to avoid buying it.*

He plants for a *certain* not *a great* crop—*too much* rather than *too little*—to sell rather than buy it: that is, he puts the lowest estimate upon the probable yield of his land, during an indifferent season, and according to this calculation, tills as many acres as will give him the number of bushels required for his consumption: the consequence

is, he rarely, if ever, fails to make enough; and very often has some to loan, or to sell. Because, his lands may have produced twenty bushels to the acre during a propitious season; does not tempt him to plant less the next year; he still plants *many* acres for a moderate yield to the acre. Now I am afraid this is not your plan. You are too nigh Charleston, where corn can be easily bought at fair prices; but with us, the loss of three corn crops in succession, cripples one much, and tends to his utter ruin.

Moreover, you do not use the plough as extensively as you ought: corn cannot be raised well on a stiff, flat soil without it. With the hoe, you merely scrape a surface soil, that has been used since it was virgin. Now, when I tell you of the nature of a clayey, flat soil like yours, you will see at once the importance of breaking it up early in the winter. 1st. A clayey soil is rendered pasty by rains and hardened by heat, in either of which conditions the roots of plants cannot spread. 2d. It absorbs moisture from the atmosphere *on its surface only;* and therefore allows no moisture to percolate to the roots of plants. 3d. "It imbibes the water of rains, and retains it by so strong an affinity, that when the supply is in excess, it remains until it stagnates, and causes the roots of plants to decay." 4th. It is colder than other soils, and retards the early spring culture. 5th. Even with a due proportion of rain its particles are so adhesive, that the roots of plants cannot move through them in search of food or moisture.

These are serious objections to a soil, yet can they be easily obviated by deep ploughing in early winter; for it will cause these results. 1st. By breaking up and exposing the earth to hard frosts, the particles of water contained in it *congeal*, *expand*, and make it crumble or granulate; thereby softening and rendering it more light, and susceptible by its porosity of the percolation of water or under the action of the sun of throwing off vapor. 2d. The seed of grasses are turned deep under the earth, and for want of air cannot germinate. 3d. The roots of many plants are exposed to the frost and killed; and thus instead of consuming the strength of the soil, are converted into manure. 4th. Insects or vermin, from the same exposure die and turn to manure. 5th. The nutritious particles of manure, which in solution with water, have percolated below the ordinary depth of culture, are brought

to the surface, and afford additional nourishment. 6th. By this deep ploughing, the soil may be worked with more than thrice the usual facility. 7th. And lastly, in farmers' phrase, "it makes the land sweet, warm and mellow"—it admits more air to the roots of plants, more rain water; and absorbs more moisture from the dews and the atmosphere.

Apart from the Agricultural testimony of every age, a recent experiment satisfies me of the value of this deep ploughing in flat lands. A gentleman in St. ——— Parish, at my suggestion, last year, planted a field of corn (No. 1) in this way. He broke it up early, five by five feet, two stalks in the hill, and attended it solely with the plough; and he assured me it overmeasured all his other corn, five bushels to the acre. This year he broke up in the same way an adjoining field (No. 2,) and again the field No. 1, and planted both in corn, five by five feet, two stalks in the hill. Field No. 2, was planted three days before No. 1, and was more highly manured. Throughout the season, No. 1 showed the freshest and most vigorous growth of the two, and in my opinion will overmeasure No. 2, by at least six bushels to the acre; this difference can be traced only to the cause—that No. 1 had the benefit of last year's ploughing; for both grew under the influence of the same seasons; are of the same quality of soil; were worked alike; manured with the same material; while No. 2 had the advantages of being manured the most, and of three days start in a good season.

In conclusion, let me add, that all your corn should be planted in March. Indeed, I have made it an object to inquire of the corn planters in many parts of the State, who generally assure me, that *early* is always better than *late* corn. An acquaintance with the lands and seasons of your Parish convinces me, that you should fully entertain this opinion, not alone, because your season of germination is nearly two weeks earlier than in the middle country; but because I am satisfied, that by early planting and working, before the seeds of grasses have been *quickened* by warm weather, the crop may be kept cleaner, worked easier; and, what is of more importance, *made*, before the appearance of the autumnal storms, so common and injurious to the sea-board culture.

Yours, truly, C. R. C.

Improved Breed of Sheep.

We had the pleasure, a few days since, of examining two sheep, or rather lambs, from the plantation of Col. R. F. W. Allston, on Pee Dee. They were extremely well grown for their age, and both are males, crossed with the Smyrna or broad-tailed breed. One was, however, only a quarter blood, differing little or nothing in general appearance from our ordinary sheep, but on examination of his tail, young as he is, it was found to be considerably larger than the same appendage to our common breed. The other is a three-quarter blood, and a very superior looking animal to the other. His face and feet were quite black, while every other part was entirely without spot or blemish. He was larger than the quarter blood, and we thought him in fact, equal in height and girth to a full grown sheep of the common kind. His head was ornamented with a pair of horns which had already run one circle of about seven inches diameter. But what most of all interested our attention was his tail; it was indeed such an one as we had never before seen or felt. We judged it to be about twelve inches long, six wide, and nearly three thick. As we felt it, again and again, we could not but picture to ourself that very tail, served up with the adjuncts of capers sauce, &c. It was alas, our fate only to handle it. It is for the tail this breed of sheep is particularly preferable to others, making as it does a most luscious dish. The remaining parts are said to be fully as good mutton as we generally have in this country, and though this animal is said not to be more prolific than the sheep common here, the growth is much more rapid. It is also said to be a healthy breed, and raised with great ease. We hope no opportunity of bringing full bloods from their native land will be lost; meanwhile ten or twelve three-quarter bloods can be had of Col. Allston early in the winter, by addressing him a letter at Georgetown, (S. C.)

Agricultural Convention.

We are pleased to see the suggestion of assembling an Agricultural Convention at Columbia, is producing the good effects we had hoped it would. Not only have delegates been in many instances already appointed to meet their agricultural brethren for deliberation and counsel, but new associations of that kind have been formed, and are now being formed in parts of our State where hitherto they had no existence, and were known only as things possible to be organized. It is time we should put our hands to the plough with a determination not to look back. The scheme of bringing together a Convention of planters and farmers is gratifying to the friends of Agriculture beyond the limits of our own State. We are so well convinced of the correctness of the remarks by Mr. Ruffin, (the able Editor of the Farmers' Register,) on the subject of a South-Carolina Agricultural Convention, that we give them entire from his August number.

He says,—"We rejoice to see that an Agricultural Convention for the State of South-Carolina, is to be held in November next. If zealously and efficiently carried through, there is no initiatory measure more likely to render service to the declining agricultural and general interests of South-Carolina; and no State in the confederacy needs such aid more, or is better fitted, by the offered bounties of nature, to profit by the first efforts, and what we hope may be the consequences of the action of a properly operating Agricultural Convention. In referring to the means for resuscitating, and giving new and heretofore unknown vigor to the soil of this State, (or at least a large portion of it,) we allude principally, though not exclusively, to her immense and as yet untouched and profitless beds of fossil shells, or marl, which alone would serve, if judiciously and properly availed of, in a few years to increase the gross products four-fold, and the nett product ten or twenty-fold, of all the region underlaid with this calcareous deposite. And we firmly believe that this immense amount of improvement, and of created wealth, might be secured, by an outlay of annual expense not greater than the actual cost of removal annually incurred by the thousands of emigrants from South-Carolina, who are continually deserting her in her

decay, to seek more fertile lands in the new South-Western States. This declaration will probably be deemed ridiculously extravagant. Nevertheless it is our firm belief, founded upon large experiment and very extensive observation of the use of calcareous manures in the similar region of lower Virginia—though applied there as yet very insufficiently, and generally injudiciously, in almost every case. *Where marling begins, emigration ceases.* We are not among the adventurous class of speculators, or of those who are willing to exchange a certain benefit in hand, for the chance of a much greater one in prospect. Yet—if it were possible to try the chance—we would not hesitate to exchange all the possessions that we have yet acquired, and our labor for the next twenty years, for the one-hundredth part of the *nett profit* which South-Carolina alone would gain by the judicious, economical, and general use of marl, after the mode, and in accordance with the theoretical views, which we have tried so vainly (or at least with such limited influence,) to impress upon the great agricultural public."

"*Where marling begins, emigration ceases.*" This will, we think, be found true, for we cannot be induced to believe the mere love of adventure will induce our citizens to leave their homesteads, and sunder associations cherished from earliest infancy. Some restless spirits there are, who live only upon excitement; and this they find in change, never feeling content to remain long in any place. But they are few in number compared with the hordes who seek settlements in the far West. The great majority emigrate reluctantly, and at a considerable sacrifice of property, to say nothing of feeling; but under the honest conviction that they will benefit themselves and their families, and that where they sow ten, they will reap a hundred fold; and so on to the end of what has to many, been proved a fallacy. The gains of many, in a pecuniary sense, have been more matter of show than of fact; while to others they are nothing opposed to the sacrifice made; and many are now in the West, who repent their folly and curse the day they abandoned the comforts of an established home, and all the concomitants that make early home so delightful, for questionable gains, and the discomforts of a wilderness home, but little better than savage—a home, that to be abhorred, need but be known. As then the object of removal is with the mass the acqui-

sition and culture of more productive lands, it appears to us that if by any possible use of marl, or other manure, our soils can be resuscitated, lost fertility be restored, or fertility be imparted to those over which heretofore nought but desolation and barrenness reigned undisturbed, it is the imperative duty of both Legislature and People, to do it—not to wish it done—but, to do it. If we mistake not, November of this year, will be a remarkable epoch of time, in the history of Agriculture in South-Carolina.

On the regulation of Sales, and Disuse of Ardent Spirits.

Mr. Editor,—Much has been said in regard to the sale of ardent spirits, and in some of our districts such a course of action has been adopted as to render it almost certain some extraordinary legislation will soon be had upon the subject. A move in this matter well becomes all. Agricultural societies, and it will be well if the Convention proposed to be holden in Columbia take it up and enforce it upon the attention of the Legislature, for no class of citizens is more interested in arresting the progress of the evil complained of. But in our efforts to do this, care should be had that we do not increase it. My own opinion is that the sale of ardent spirits may be regulated by Legislative enactments, but it is only public opinion which can control the use of them. Great revolutions in public opinion must be the work of time, and while I hold in the highest respect the opinions of those who advocate absolute prohibition of the sale of them, or a limitation to nothing less than twenty gallons, I would propose two remedies. 1. Sales as heretofore, but under a high charge for license. 2. The formation of societies among the ladies, a standing rule of which should be the exclusion from their company of all who purchase, sell, or use the forbidden fruit of the still. Bring to your aid the influence of our females, and more will be done towards ridding our State of the accursed evil than can be effected by the thunders of the law. The power of woman can sooner revolutionize public opinion than any other, man is accustomed to acknowledge. Till this can be accom-

plished, I think the best plan is to make the wholesale vender as well as the retailer pay a high tax to the proper authorities for permission to sell in such quantities as the licenses shall respectively specify. This will have the effect of reducing the number of people engaged in that line of business, and of securing to the State gratis, the aid of the very persons licensed to deal in the article. They will be a very efficient watch upon those who do not procure licenses, because being heavily taxed, it is their interest to prevent others trenching on a business which it is intended by the law, as well as the tax payers, shall be monopolized by the few who embark a considerable, if not a large portion of their capital in it. To protect this interest, the tax-payers will unhesitatingly inform against the violaters of the law, and trespassers upon their exclusive rights. If the sale of spirits is prohibited altogether, or restricted to quantities not under twenty gallons, the law will remain virtually a dead letter; means of evading a law will easily be discovered, when it is made the interest of every one it is designed to act upon, to do so. Very easy you may depend upon it. In my view, it is far better to tempt men to sustain wholesome regulations than to dodge the law and laugh at its framers. Therefore the friends of temperance should be cautious in recommending particular measures to the Legislature for their adoption, and the latter body should carefully inquire whether those, or other measures tend most to attaining the object in view. The friends of temperance have my heartiest wishes for their success, but in their great undertaking, they must be content "to walk before they run," or they will defeat their own hopes. Let us advance cautiously, and hold the ground we gain. There is danger in both the remedies I have seen proposed for the consideration of our Legislature, which are—1. To prohibit the sale of a less quantity than twenty gallons. 2. Total prohibition of sales in any quantity. Either of these may be safely adopted some years hence, but either suddenly or soon taking the form of law, will be condemned by a very great majority of the people. In some districts popular tumult, if not violent resistance to the law will be, I think, a certain consequence. We have but lately seen how difficult it is to allay excitement among the people. Either of those violent remedies will be deemed by the many a tyranni-

cal exercise of power, and no surprise should be felt, if the people resolve to maintain, by force of arms, what they consider their rights. They will not inquire into the kind or quality of those rights, but simply into the fact, whether or not rights have been invaded. The answer is hardly to be doubted by any one, and cannot be, by those who will reflect seriously. What the result may be, we ought not to try, for much it is to be feared, the remedy will prove worse than the evil, and indeed may prove the very means of fixing it forever on the State—this will be the legitimate effect of a violent and abortive attempt, to remove that or any other evil habit, or traffic. Proceed slowly and cautiously, and some five or six years from now, measures may be prudently adopted, which at present would be not only imprudent, but hazardous in the extreme. Be warned, ere it be too late. Your obedient servant,

R. H. D.

Christ Church, Sept. 19, 1839.

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Christ Church, Sept. 29, 1839.

Mr. Editor,—In the communication I addressed you a few days back, there is if memory serves me well, an important omission, which I beg leave to supply if not too late. If I did not do it, I meant to suggest, in addition to laying a high tax on both the wholesale and retail venders of liquors, that no charge to any individual's account for a less quantity than *five gallons*, should be recoverable at law, instead of a quart as is now allowed. I would moreover include in the term liquors, every preparation which can make a brute of a man, whether the produce of the distillery or the brewery. If beer, &c. &c. be allowed to pass without tax, what will be the use of the license law? Only an oppression of those well disposed persons who take licenses, while under the pretence of selling beer, ardent spirits will be kept in store, and be *given* away, the shop-keeper taking care to *sell* beer (never to be drank) at a round price. Permit the sale of beer, wines, cordials, &c., and the law prohibiting the sale of ardents totally, or restricting it to the minimum

quantity of twenty gallons, will be evaded hourly, unless the State or Corporations station a watch in every such place.

Your obedient servant, R. H. D.

Experiments in Cultivating Corn.

Barnwell, Sept. 20, 1839.

Mr. Editor,—Allow me to record in your valuable work the result of my experiments this season with five kinds of corn, and with two rows of each. The beds were five feet apart and the corn was planted in chops in the alleys of the last year's cotton beds, every four feet, on the 21st of last March.

Nos. 1 and 2, with yellow West-India flint corn. In each chop of No. 1, two grains; and in each chop of No. 2, four grains were dropped.

In No. 3, two grains; and in No. 4, four grains of North-Carolina white gourd seed corn were dropped.

In No. 5, two grains; and in No. 6, four grains of North-Carolina flint corn were dropped.

In No. 7, two grains, and in No. 8, four grains of white flint corn (obtained from Alfred Huger, Esquire) were dropped.

In No. 9, two grains; and in No. 10, four grains of Baden corn were dropped.

Over each chop where two grains were dropped, one quart of cotton seed was placed, and over each chop with the four grains of corn, two quarts of cotton seed were placed.

The corn was soaked for three days and two nights, in a strong solution of saltpetre. It was well cultivated with the hoe and plough. The drought much injured the plants, and these ten rows were not suckered. I am induced to conclude the corn was injured by these suckers, as they produced no corn.

On the fourth of this month, these ten rows were shelled and measured, after having been gathered about ten days. The product of sound corn was thus:—

No. 1, had 120 ears, and made 15 quarts, which is at the rate of 19 bushels and 7 quarts to the acre.

No. 2, had 134 ears, and made 17 quarts, or at the rate of 21 bushels and 25 quarts to the acre.

No. 3, had 111 ears, and made 21 quarts, which is equal to 26 bushels and 29 quarts to an acre.

No. 4, had 163 ears, and made 25 quarts, or at the rate of 32 bushels and 1 quart to the acre.

No. 5, had 108 ears, and made 14 quarts, which is equal to 17 bushels and 30 quarts an acre.

No. 6, had 116 ears, and made 14 quarts and one pint, or equal to 18 bushels, 18 quarts, and 1 pint to the acre.

No. 7, had 117 ears, and made 23 quarts, or at the rate of 29 bushels and 12 quarts to the acre.

No. 8, had 141 ears, and made 28 quarts, or at the rate of 35 bushels and 28 quarts to the acre.

No. 9, had 194 ears, and made 27 quarts, or at the rate of 34 bushels and 19 quarts to the acre.

No. 10, had 262 ears, and made 38 quarts, or at the rate of 48 bushels and 22 quarts to the acre.

I calculate each row of corn as the 41st part of an acre, (210 feet square) leaving 2½ feet outside of the first and last row of the acre. The Nos. which I wished to have 104 stalks of corn, lost about 14 stalks to each row, and those I wished to contain 208 stalks of corn, lost from 40 to 50 stalks to each row.

The Huger corn is at least two sizes larger, as it respects the stalk, length of the cob and of the blades, than any I have ever planted, and is a fine white flint grain. The yellow West-India corn is an early corn, very sound, and the first fit to grind. Those ten rows of corn were in a field of Baden.

I am, with respect, your ob't serv't.

JOHN S. BELLINGER.

It is with pleasure we give place to the foregoing article of Dr. Bellinger. His experiments are exceedingly useful, and only want the test of a more extensive trial to render them worthy of general adoption. We are convinced that the proper way to make large crops of corn in our State is to manure highly and plant close. By such a plan, we have less land to attend throughout the entire season, less trouble in gathering the corn, and much less care in guarding it from birds. We have ourselves tried similar experiments this season, the result of which shall be made public in due time.—*Editor.*

United Agricultural Society of South-Carolina.

To the Editor of the Southern Agriculturist.

Dear Sir,—It is doubtless within the recollection of some of your readers, that there once existed a Society, organized under the name of "The United Agricultural Society of South-Carolina," which held its meetings annually, at Columbia, on the 1st Monday in December, It was constituted of delegates from the several agricultural societies in the State, each of which societies contributed twenty dollars, towards defraying the expenses of the general meeting and preparing premiums.

The first President was the Hon. W. B. Seabrook, of St. John's Colleton, who, on retiring in 1828, delivered before the Society an excellent address. He was succeeded by Col. Thomas Pinckney, of the Pendleton Farmer's Society. The officers elected at the same time, (this was the last election,) were James Ferguson and Thomas Smith Jr., Vice-Presidents; William Elliott, Treasurer, R. F. W. Alston, Secretary, I. N. Whitner, William Cattel, William H. Hay, James Ferguson, William Elliott, Joseph J. Pope, Benjamin Green, and I. Ward Mathews, Committee of Correspondence. The last meeting took place in 1831, after which, the interest of our people became so much absorbed by the threatened position into which our State had been thrown, whilst opposing a Protective Tariff, and defending the principles of the Federal Constitution, there was never another meeting.

I take the liberty of calling your attention to the subject, with the view, chiefly, to request that you will lay before the public, a Resolution which was adopted at the last business meeting of the United Agricultural Society; the substance of which, regarding it simply as a recommendation to the people of the several districts, who are about to unite by their delegates in Convention at Columbia, may still be acted on, if it meet with general approbation. The following is an extract from the Minutes of the Society:

"*Tuesday, 15th December,* 1829."—Mr. Lawton begged leave to offer the following as a substitute for the Resolution sent up by the Society of St. Andrew's Parish, which he represented:—

"Whereas in an agricultural community like ours, it "must be obvious that whatever may promote its inter- "ests ought to receive the fostering care of the Legisla- "ture of the State.

"And whereas it is a lamentable fact that no institution, "public or private exists, where our youth can receive "information on this all-important subject: Therefore "Resolved, that each delegate representing the different "Agricultural Societies at Columbia, be requested to "bring the subject before the Society to which he be- "longs, for the purpose of preparing a memorial to the "Legislature, praying the establishment of a Professor- "ship of Agriculture in the South-Carolina College," —which was adopted.

Now, if the object herein expressed be desirable (and if in connection with the Professorship, there be established a farm for testing improvements, preparing seeds for general distribution, and otherwise illustrating the principles of the science by practice of the art, I regard it as highly desirable) much may be done towards effecting it, by delegates elect, submitting the purport of the resolution to the people of their districts or societies respectively, and ascertaining their sense in relation thereto, so as to be prepared to act advisedly, should the matter be brought before the Convention.

Very respectfully,

Concerning the application of labor to Silk.

Pendleton, Sept 22, 1839.

Mr. Editor,—In your number for the present month, I perceive your old correspondent (as he styles himself) Senex, is endeavoring to throw cold water on the culture of silk in the cotton growing States, and in this State particularly. He takes up the matter as if it had been broadly proposed to abandon the culture of cotton for that of silk. In this I apprehend he is quite mistaken, at least I have not any where seen such a proposition submitted for the consideration of our planters. The adaptation of our soil and climate to the production of silk, has been in many places and periodicals, as well as in the daily papers asserted, and I believe on such good

reasons as to demand anxious consideration. If the large fund of unproductive labor which we find in every part of the State, can be made available for profit to the planter, and to many who are under our present bad economy nothing at all, but as drones in the hive, why not make it so? Senex must admit the existence of such a fund of dead or useless labor, or he must deny that there are among us very many men, women, and children of all colors, who are perfectly idle, consuming the substance of others, while they produce nothing but mischief (the legitimate child of idleness) yet are abundantly competent, not only to taking proper care of themselves, but of adding largely to the annual aggregate of the agricultural productions of the State, did we but open a field for their employment. Let this be done, and it will be found few of our present unemployed people will remain idlers, for when any one, with but a sprinkling of true pride can be independent—will he or she eat the bread of dependence? At present, the class of idlers is so large that it is no disgrace to be numbered in it, and many there are who think (or seem to) that idler and gentleman are synonymous terms. Now Sir, with the permission of Senex, I would employ all who are too proud to be dependent, and would by so doing, hold out in bold relief for the *admiration* of the industrious part of the community, all those who are enamoured of the title and dignity of *idler*, and who are not too proud to eat the *base* bread of dependence. Offer employment adapted to the sex, age, and condition of those who are now but dead weight to their friends, some even a charge upon the commissioners of the poor, and the class of idlers will be reduced to insignificance in regard to number, and to unqualified contempt in point of character. Senex probably does not know that through want of suitable employment many women and children, sometimes even men, are obliged to put themselves on the bounty of the districts or parishes wherein they severally reside—and that so numerous are they, the commissioners of the poor are obliged to levy an assessment for their support, which the tax-paying portion of the community consider and feel to be oppressive. Senex may attribute this state of things to sickness and orphanage, and he will be right in part, but mainly, it is occasioned by *idleness*. And this

same idleness is justly attributable in the vast majority of cases, to absence of employment suited to the physical capabilities of these legal paupers. Almost all can do light work, while few or none can undergo severe labor. The recommendation to cultivate the mulberry and the vine in this and other States, has for one, among other objects, if I do not mistake the matter, the employment of these very people; these legal, but not physical paupers. I am sure no sensible objection can be raised to making those of them work who are capable of it. Senex will not, nor will he dislike seeing the Nothingarians, i. e. the idlers not on public charity, set to work, but he has taken a wrong view of the subject, and a proposition to provide fit employment for the feeble and young among our people, for one, to banish cotton from attention. If he has seen such, I have not, and willingly ask pardon for charging him with mistaking the question. The culture of cotton does not necessarily prevent attention to the mulberry, for we all know there are on all cotton (and rice) plantations, some people too old, and some too young for hard work. All these are consumers only, and therefore a tax. These are part of the Nothingarians it is proposed to make profitable to their owners, by providing for them labor suited to their capacities. I can conceive of nothing more suitable for them than the mulberry or the vine, and on large plantations where this class of idlers is always pretty large, both can be cultivated to good profit. If Senex will not undertake either, but prefers maintaining a portion of his people in idleness, let him do so, but let him be quiet, and not discourage agricultural enterprise or experiments. If the experiments now being made with the mulberry prove unsuccessful, there will be no great loss of either money or labor; if successful, who among us can foretel and fix the measure of advantage? On one point I have no fears; on the other, I will not attempt the prophet. Senex quotes a passage from a writer on the agriculture of Italy, and this author, Sismondi, gives his views of the condition of things in *Tuscany* in the year 1800!! TUSCANY is not ITALY, though it is in that portion of Europe known by the latter name, but it is no more Italy than South-Carolina is North America. The authority of Sismondi is good for nothing in the present

case. Not the weight of a multicaulis bud. By reference to his geography, Senex will find Tuscany is about *ten degrees* farther North than South-Carolina, or in about the same latitude as the Falls of Niagara. From this we may infer a considerable difference of climate, and the rather as that part of Italy is washed on one side by the Mediterranean sea, and on the other by the Gulph of Venice, the space between not exceeding one hundred and twenty miles. But waiving the *trifling* point of climate, I will make a remark or two upon the assertion of Sismondi "that the peasants continue to raise the silk worm only because they cannot summon resolution to break through their old habits, nor to substitute fruit trees for those of the mulberry, and yet for years past, the profit has not paid them, by much for their labor—even when no calamity befalls them, &c." As well might I say to the rice or cotton planter of 1838 or '39, Sir, you ought not to plant rice, for you must recollect that during the last war you could not get over a dollar for your rice; to the cotton planter; Sir, you should not cultivate cotton, it was only worth five or six cents in the war of 1812. To both; gentlemen, planting on these terms *is* ruinous, especially so, as twenty-five years ago you had to pay 25 cents for sugar, 50 cents for coffee, $3 for salt, double taxes, and double for every thing. No, that is running too fast, but for some other things, prices in the same ratio. Would that reasoning satisfy planters of the present day? I think not, and yet the quotation from Sismondi is exactly in that spirit.—The French revolution convulsed all Europe, and of course all Italy. There was an extraordinary demand for men, money and horses, for combat, and for transportation of the munitions of war. I see no cause for surprise that silk (an article of luxury) should decline in value, while the value of necessaries was greatly enhanced. Almost countless thousands of men and horses were in field and garrison—non-producers. Most of these men and horses were but a little time before employed in agriculture, and were producers, but being withdrawn from that pursuit to fight the battles of their country or of their masters, the remaining population had to produce provisions for the support of themselves and the soldiery. This was the case from one end of Europe

to the other, and it followed as necessary consequence, that those who had any article of provisions for sale, were well paid for their labor, while the producer of luxuries found small demand for them, and was not remunerated for the expenditure of time and labor. And among these last was the grower of the mulberry. He was obliged to pursue his old business whether profitable or not, for a plain common sense reason, namely, he could not discover any thing at which he could do better. Suppose he had rooted up his mulberry farm for the purpose of planting grain—where would he obtain the labor of men and horses necessary to successful cultivation of grain? Order them from the nearest army or garrison to be sure. True enough, he might do so, and so he might "call spirits from the vasty deep, but will they come?" I guess not, as we Yankees say. But the mulberry farm being broken up, laborers must be had, and such as it is, the cocoonery must supply it; with what prospect of good it requires little calculation to determine. The Tuscans and other Italians took all these matters into consideration, and they continued to cultivate silk at half price, for the same reason *we* went on planting cotton and rice during the war at a still lower rate, which reason is that we (like the Tuscans) could make no more profitable use of the lands and labor at our disposal. A man's mind may be "cultivated and capacious," and I doubt not that such might have been or was the case with Sismondi's, but it does no more follow that he was well acquainted with the condition of Italian agriculture, than that he was, or was not a good kite flyer. I rather incline to think he was a kite flyer, and no very good one. The declaration that the Tuscans did not abandon the mulberry for fruit trees, because they had not the resolution to break through their old habits, is a kite with the belly-band wrongly set, and instead of flying, it oversets and pitches headlong to the earth. Such a change might, without great trouble, or much expenditure of money, be effected in this country where land is held in plenty by every farmer or planter. But in Europe, where the farmer thinks himself happy and even blessed if he can get a few acres for grain, &c. and a very few more for pasture, the change is wholly impossible. It is a change which none but the wealthy landlord who works his own lands and has a store of money by him can effect. An orchard would yield no return for some years. The "peasants" spoken of by

Sismondi, are the farmers of the country, and they do not continue cultivation of the mulberry because, "they have not resolution to break through their old habits," but because they cannot cultivate any thing which will pay them better. In my opinion the substitution of forests of fruit trees, for groves or fields of the mulberry and the cocooneries, as safer and more profitable, is a bald-headed absurdity, Sismondi to the contrary notwithstanding. He says, after detailing the various kinds of losses and damage the culture of silk is exposed to, that the (Tuscan) "peasant (or silk farmer) ought to esteem himself happy, if in four years he has been able to succeed in three." Now this is not so bad. How many of our rice or cotton planters do better than to send three full crops to market out of every four years? How is it with the sea-island planters? But suppose the case bad, and very bad too, it affords a clear proof that even so fine a country as Italy cannot cultivate any other article to so much advantage. Not even Sismondi's fruit trees. Suppose all Tuscany converted into an orchard, and supposing the seasons propitious, the crop superabundant, will the laborer be paid? No. The fruit from its super-abundance would scarcely be worth gathering, and very many articles of first necessity which formerly he obtained at low rates, he must now purchase at much greater, and dispense with luxuries entirely. Fruits must be sold before a certain time, and at any price offered, or all would be lost. Such is not the case with silk, and the Tuscan peasant has "resolution" enough to stick to the beaten and safe track. But really did Sismondi think fruit a safer crop? In my judgment, it is not near so much to be depended on as the other, for fruit trees are liable to injuries which do not affect the mulberry. I will name but one, and that a storm. The fruit is blown to the ground, and with it all hope of a crop; and many trees are ruined forever; the mulberry encounters the same storm, but its foliage can be gathered and fed to the worms, and in a short time the tree will recover its loss; so that if good care be taken of the cocoonery, all will be well. If some should be destroyed, they will still afford cuttings for another crop. Much more might be said to show the folly of substituting fruit for silk, but it is foreign to the present question. I would only ask of Senex to inform us what the Tuscans say *now* when war vexes them no more, and laborers (horses and men) are plenty. Perhaps Senex will not deny a

time may come when cotton will not pay "by much for the labor" of cultivating it. I do not propose or advocate the substitution of silk for cotton, but I would urge the culture of silk as a means of calling into profitable action the amount of labor we can command, but which is now inert and wholly useless. If in process of time, the culture of silk being found profitable, cotton should give place to it, I see no reason why the change should be regretted. If the love of gain could induce the change of a healthy for an unhealthy pursuit, I would most heartily join Senex, and all others opposed to it. But it will not be contended the culture and preparation of silk are more injurious to health than the culture and preparation of cotton. Therefore I advocate, and warmly too, the experiments now in progress, to make it a staple production of South-Carolina. If Senex believes short cottons will always be a staple of this State, a peep into the future, and a little reflection upon what he there sees, will, I am sure, convince him of his error. What will supersede cotton, I will not undertake to say positively, but *I am positive* that it will be superseded, and I *think* by the vine and the mulberry. When we find from the advanced price of slaves here, and the superior productiveness of the lands, South and South-West of us, that we cannot afford to grow cotton at the prices our distant brethren can, then will *we* pluck up "resolution to break through our old habits," and substitute any other culture which promises certain and greater profit. Indigo had its day in South-Carolina, and in time to come the same will be said of cotton Pray advise Senex to lend a helping hand, and not throw any more cold water on the awakening energy of his brethren. They have been napping quite long enough.

I am with much respect, your obd't serv't,

A FRIEND TO SILK.

What ought the Agricultural Convention do? Being an Answer to a Letter on the subject, addressed by one of the Delegates to the Editor of the Southern Agriculturist, and now published by request.

My Dear Sir,—I cheerfully comply with your request in suggesting "what will or ought to be the subjects upon which the Agricultural Convention, to be hol-

den at Columbia in November next, should act?" In doing so, I must premise that the suggestions are not wholly my own; but the result of frequent conversations had during the past summer with agricultural gentlemen throughout different portions of the State. Against nothing which I suggest can the objection of novelty be urged. Impressed with the belief that we are to *learn* and not to *teach*, I have merely presented what other States have done, and leave the wisdom of the plans to recommend themselves.

Never were our agriculturists better prepared for useful and concerted action. For several years back, have I in my editorial relations with them recommended a General Convention, but not until the present have they received the recommendation with such almost entire unanimity. They have now shaken off their slumber, inquiry is every where afloat, and it is with a view of meeting the demand that I consent to your use of this letter, should it in your esteem merit publication.

In its memorial, the Convention should recommend to the Legislature :—

First, The appointment of an Agricultural and Geological Surveyor of the State. The vast utility of such an officer to our agriculturists is best exemplified, when the duties he would be called upon to discharge are stated. He would travel through each district of the State in routine, and survey, 1st. Its *geographical state and circumstances.*

Under this head, observations and remarks, predicated of the observations of others, might be made as to the *state of the climate* throughout the year—its effects upon animal and vegetable life, and its suitableness to the successful cultivation and production of different staples. The *soil*, *minerals*, and *face* of the district might be also considered; with a view of presenting to our planters those tests of the kind and character of their lands, which are far too expensive for individual accomplishment.

2d. *State of Property.* Under this head, observations would be made as to the extent of plantations in each district, whether large or small; whether owned and cultivated by resident or non-resident planters—by what kind of labor—whether by slave or free—and if by both, the relative productiveness of each.

3d. *Buildings or Rural Architecture.* Observations might here be made as to the style of building in each district. Whether best suited to the nature of the cli-

mate, the materials for building, or the purposes for which such buildings are intended. Under this head an intelligent and observant surveyor might present suggestions, which could not fail of producing among our planters an improved taste in the construction and arrangement of their plantation buildings.

4th. *Implements of Husbandry.* An enumeration of these might be made—new ones, and proper improvements on the old, might be suggested—by the adoption of which, much labor and time would be saved, that are now injudiciously expended.

5th. *Labor or Power.* What kind used should be stated—whether manual, horse, mule, oxen, or steam, and what sort best adapted to the condition of the district.

6th. *Live Stock.* These ought to receive particular attention. The different breeds should be noticed, and the mode of raising and feeding, whether best suited to existing circumstances.

7th. *Improvements.* Under this head, very particular remarks should be made upon the *roads*, *bridges*, *ferries*, *water and land carriages* of the district—and every means of improving the same, whether by State, Corporation, or individual exertion, should be suggested.

These are some of the duties which an Agricultural and Geological Surveyor might discharge. I grant, that they appear numerous, and even beyond the acquirement of one man; but the difficulty is only in our own imagination. Similar surveys have been made in England, France, Belgium, Germany, and are now going on successfully in Russia and other portions of Europe. In our own country, they have been partially conducted in several of the States, and are now displaying their immense utility in the improved condition of the agriculture of Massachusetts. In that State, a surveyor, whose duties are similar to those I have just enumerated, has commenced his work. Already has he gone over two or three counties, and published his report of their Geological and Agricultural condition. The amount of practical information which these reports embody is inappreciable; and while every farmer of Massachusetts must feel himself benefited, the agriculture of the whole Union must be improved by them.

In a recent journey through the State, the demand for such an officer as I have described, met me at every stage. Every where uncultivated soils, with perhaps

rich minerals under them, lay valueless for the want of some competent person to analyze and expose their riches. Farmers were all about leaving their exhausted lands, and taking from the country their labor and wealth; when just beside them, may have been opened the secret cause of all their failure and disappointment. To state one out of an hundred similar instances, a distinguished agriculturist assured me of the fact, that several years ago, at his own individual expense he had a portion of soil in his neighborhood examined, with the view of testing what component part it wanted, which rendered it so unpropitious to the cultivation of the fine cotton. The absent part was discovered, and further examination presented it in an adjacent and more favored spot. Since which period, from this discovery alone, lands in that vicinity have been enhanced in value at least fifty per cent. Let me repeat that this is only one out of an hundred instances of the kind I could adduce; and any one who has paid attention to the history of agriculture, could mention many more. The example of Count Chaptal, of France, should convince the most skeptical. That distinguished chemist purchased poor lands—examined and tended them upon scientific principles, and while others about him were reaping nothing but tares and thistles, his lands yielded him fifty and an hundred fold.

Secondly—The Convention should recommend the appointment of an *Agricultural Professorship* in our South-Carolina College. No seminary of learning is complete without such a professorship; and no well educated man, particularly in a country like ours, should consider himself accomplished without knowing at least something of the elements of agriculture. Such has not been the sentiment of gentlemen heretofore. They attend college, pass through a course of the classics, belle lettres, mathematics, and a few other of the sciences, and return home knowing as little of the principles of that science, by means of which they are clothed, fed, and educated, as if it were a knowledge of boorish acquirement, and only fit for their slaves. Even in the European Universities, years ago, agriculture was deemed unworthy of being taught as a science. But this sentimeut of a feudal age has gradually worn away, and for an educated European not to know something of Botany, Natural Philosophy and Chemistry—the essential sciences which compose that of agriculture, is at present as remarkable as

formerly, such acquirements were wonderful and liable to persecution.

It is often urged that the planter may pursue his vocation without such an elementary education. So indeed he may, and so may the physician pursue successfully his profession without the study of anatomy, the materia medica, or any of the other branches of his science—but in both cases must they be considered quacks, for whom fortune and good circumstances have done more than the results of an enlightened experience.

Thirdly—The Convention should recommend the *establishment of an Agricultural School* in some healthy and central portion of the State. To this school should be attached a sufficient extent of arable land, on which might be conducted different agricultural experiments. And while in the school, the elements of agriculture should be taught, its practical effects should be tested in the fields, under the eyes and by the labor of the students themselves. As to the decided utility of such schools, we are not without example, that of Von Thaer at Moegalin, in Prussia, is well known to most readers, and in our own county the Van Ranselleer Agricultural School in New-York, and the Farm school at Thompson Island, near Boston, afford full promise that such a system of education is neither time nor money thrown away. The latter school was instituted for the support and education of orphan and vagrant boys. They there receive an excellent English education; and while they are taught the scientific principles of agriculture, they follow out its details as a means of supporting themselves and the institution. The plan has succeeded beyond the most sanguine anticipation of its founders, and I speak with a knowledge of facts, when I say that in listening to the examination of this school, most of our planters would find themselves put to the blush at their own deficiency of professional knowledge, in contrast with that of many of the students who as yet have not numbered fifteen years. In a state like ours, where overseers are to be educated, their character formed, and their habits fixed—of what incalculable advantages would be the creation of such an institution.

Fourthly—The Convention should recommend the entire *Reformation of our Free School system.* In every district in the State, schools would be supported out of the public fund. And in these schools the elements of agriculture with the other sciences should be taught

In addition to which, some simple system of military tactics should be prepared, whereby the students might be constantly and efficiently drilled.

Objections may be raised to the expense which such a reformation might incur, but when we reflect that the child of every citizen will be thus educated alike, and with regard to our own domestic policy and institutions—all objection must vanish in the manifest advantages of the scheme. Pride of State, if nothing else, should awaken us upon this subject.

Fifthly—A thorough remodeling of our Militia, Patrol and slave laws should be recommended. As they now stand, they are confused and altogether unsuited to our condition.

Sixthly—The annual appropriation of a sum of money should be recommended to be drawn by a State society, composed of delegates from the agricultural societies of each district, to be distributed by said society in premiums, for the production of such articles as may tend to the advancement of the agriculture of the State.

Every planter in the State might become a competitor for such premiums, and a specification of the production of the article for which he competes may be handed in under oath, by the delegate who represents his district.

If an agricultural school be established, the meetings of such a society might be held once a year at the school: at which time an examination of the scholars might take place before the delegates. The offers for premiums compared—and if possible specimens or descriptions of them preserved in a proper laboratory or museum for the future use of the school and its visiters.

That such an appropriation of premiums would impart great interest to our agricultural pursuits, and be the direct means of introducing permanent improvements amongst us, has been amply illustrated by the example of other States.

These strike me as some of the most important subjects which should occupy the time and deliberation of the Convention. Upon them, among other wants of the planters, the Legislature should be memorialized—not in a tone which may imply that we ask as a favor, but that we in justice claim as a right. Let the Convention be unanimous—let not incidental questions consume its session in idle or wrangling debate, and the result cannot fail of proving highly auspicious to the interest of the State. Respectfully yours,

Charleston, October, 1839

PART II.

SELECTIONS.

[FROM THE GENESEE FARMER.]

The Agricultural Interest.

We are happy in giving the following extract from a letter to us, from Mr. Triplett, of Kentucky, on the important subject of Legislative aid to agriculture. We have the more pleasure in doing this, as the sentiments are just and forcibly expressed, and agree with the opinions so often expressed by us in the Farmer, and which we are confident will ultimately prevail. It is but a few days since an honorable Senator, in his place at Albany, declared, that the project of aiding agriculture by Legislative enactments was '*the most arrant quackery*.' If quackery, in this case, why is not aid from the same source, quackery in other cases? It was this Legislative quackery that incorporated our colleges and *endowed* them; that surrounded the profession of the law with exclusive privileges and numberless ways of acquiring wealth and power, that are forbidden to the people; and by so doing, placed *that man* in a situation to sneer at and injure those who aided his rise. When what are termed the professions ask for aid, the vaults of the treasury are thrown open; when those who have deposited the cash there, ask for the *use* of a few thousand dollars of their own money, they are repulsed with taunts and sneers. The evidence is daily becoming more clear, that farmers must see to their own legislation, or it will be left undone. But to our correspondent:—

"Considering the vast importance to our country, of the Agricultural interest—it being the very basis of all others—without the prosperity of which all others dwindle, it is strange that it is so overlooked and neglected in the legislation of our country. Manufactures, commerce and navigation, are all found to be benefited by a little legislative aid, but agriculture is supposed not to need it. I am against too much legislation. It is one of our errors, and ever will be in a republic. But while there is too much on other subjects, there is too little on agriculture. I will illustrate the evil felt in some instances, and show how legislation might remedy it. We see accounts in the journals of the day, of improved farming implements and labor saving machines, &c. A farmer purchases, say, a reaping machine. It does not answer. He curses the impostor, and forswears all humbugs. He is told he did not get the right article. But how is he to know the right one. Certificates have little value; we believe in none of them.

In the course of time perhaps a neighbor gets the right implement, and when he sees it op rate, he will buy one. I have had myself a knowledge for several years of various improvements, which I have been anxious to adopt, but have waited to see them introduced and proved by others, not wishing to be humbugged myself. In these improvements, real ones spread very slowly. How rapidly would our prosperity advance, if the march of those improvements could be expedited, and how much could that be done, if each State would have a *model farm*, where all reported improvements could be fully tested, and reported on by authority that could be confided in; and where the operation of the thing itself could be seen. There, too, manufactories of the most improved articles could be established, and the improvements or machines furnished at the most reasonable rates. Pure seeds, plants, &c. could also be had at such a farm; and what would be the expense? $6,000 per annum would borrow $100,000, which would amply suffice for the establishment, including a large farm; which would be annually increasing in value, and the income from which might be made, by good management, much, if not all of the interest on the cost; for the implements, seeds, &c. would all be considered as proved, and the demand for them would be almost unlimited. There, too, could be demonstrated the best methods of agriculture in every branch. Much speculation would be put to rest. Any improvement, when shown to be such, would be quickly adopted, and agriculture advance with rapid strides. I do not pretend to say, there may not be more advisable modes of advancing the agricultural interest; but I am well convinced that such a plan would render it a great service. The best stocks of domestic animals could be concentrated on these farms; all grains, seeds, implements, machinery, &c. &c., and an agricultural school might be attached to it.

Such plans, or similar ones, I believe, have been repeatedly suggested; but it seems, that as yet, the public mind has not been sufficiently enlightened to be ripe for it. I think, however, that every agricultural journal ought to urge it, until the subject is taken up, and some such plan adopted."

Value of Root Crops.

[FROM THE MAINE FARMER.]

The importance of raising roots to be used as food for cattle, horses and swine, during our long winters, cannot be too often nor too strongly impressed upon the farmers of Maine, at least until more of them enter somewhat more largely into the business than they do at present.

Potatoes are planted by every one as a matter of course. Next to potatoes perhaps the ruta baga crop commands the most attention. The sugar beet is next in order, though of but recent introduction. Mangel wurtzels have not generally found so much favor with the farmers of Maine as it ought to; nor has the carrot; but the most neglected of all is the parsnip. We do not recollect of ever having seen a field of parsnips growing in Maine, and we verily believe that, all things considered, they are the most profitable of either as an article of food for stock and swine. We have heretofore tried some

experiments on a limited scale with them, and, Providence permitting, we shall go more extensively into it another season. They require a little more care when they first come up, and are smaller than ruta baga, but are not so difficult as the carrot. They seem to be more nourishing than any other root, and chemical analysis warrants this idea. They will keep in the ground during the winter, but must be dug before they vegetate much in the spring. They will not keep so well in the summer as the ruta baga. The farmers in the Island of Jersey, near England, are said to make their main dependence on this root, and their cattle and swine are thereby rendered very profitable. The only objection that we know of to the carrot is the trouble it gives in weeding when it first comes up. Its small leaves so much resemble some of the weeds, that if the ground is very foul it requires careful management to avoid hoeing it up with them. We have seen the good effects of these upon a horse to which they were given during the winter season. They certainly are preferable to oats, or at any rate were for that horse. The animal was a very fleet one, and belonged to a neighboring physician, who had a great deal for him to do; and yet he kept in perfect condition with no other food than good hay, and from a peck to about a bushel of carrots per day.

The mangel wurtzel will yield, when put in a favorable situation, as much per acre, perhaps, as any other root. John Hare Powell once raised sixteen hundred and thirty-four bushels to the acre and fourteen rods: and the Messrs. H. & T. Little, of Newberry, raised thirty-three tons, ten hundred and fourteen pounds to the acre. But English writers have told us of sixty tons to the acre. We believe that it requires a richer soil than ruta baga, and more of a clayey loam. Hogs are very fond of them. We saw Mr. Haines of Hallowell, feeding his swine with them last fall, raw, and the manner in which they take hold of them, and the good condition which they exhibited, convinced us that they were very profitable and nutritious to them. The more we see and learn of the value of the several root crops in Maine, the more convinced are we that it is the true policy of our farmers to cultivate them extensively; and we hope that many who never have yet paid particular attention to this business, will begin this year. Manure high and plant close, and we will ensure you a good and a profitable crop.

Roots compared to Hay.

[FROM THE MAINE FARMER.]

Our correspondent R. and some others think they have hitherto held the ruta baga in too much esteem; and some are now engaged in crying them down, as much as they cried them up before. Now, truth lies in the mean or middle way between the extremes. We have hitherto had some little experience in feeding different kinds of roots to cattle and pigs in the winter.

We still hold them in high esteem. Some for one purpose and some for another. It is true that some of them rank higher in intrinsic qualities as food for man than others. The potatoes, for instance, are better for man because they contain more farinaceous matter or

starch than any of the others, but some of the others, but more especially carrots, are better for fattening or sustaining cattle.

One thousand parts of the potato yields of nutritive matter from 200 to 260 parts. This consists principally of starch with a little mucilage—from 15 to 20 of sacharine matter, and from 30 to 40 of gluten.

One thousand parts of the common red beet contain about 150 parts of nutritive matter, which is made up of 14 parts of starch, 121 saccharine matter, and 13 or 14 of gluten.

One thousand parts of the mangel wurtzel contain about 136 parts of nutritive matter, of which say 13 parts are starch, 119 saccharine matter, and 4 gluten.

One thousand parts of the common flat turnips contain about 42 parts of nutritive matter, of which 7 are starch, and 34 are saccharine matter.

One thousand parts of the ruta baga contain 64 parts of nutritive matter, of which 9 are starch, 51 saccharine matter, and 2 gluten.

One thousand parts of the carrot yields 98 of nutritive matter, of which 3 are starch, and 95 are saccharine matter; it also contains two or three parts of an extract which appears insoluble.

One thousand parts of the parsnip afford but 100 of nutritive matter, 9 or 10 of which are starch, and 90 saccharine matter..

The remainder of the thousand parts are vegetable fibres, useful to the animal that eats it in filling the stomach and aiding the digestive organs by what is called the "stimulus of distension," and very probably affording other aid to them, which we know nothing about, and which cannot be detected by the Chemist in his Laboratory.

Compare almost any of the above roots with the nutritive matter procured from the same number of parts of clover, or herds, or Timothy grass, as they call it at the South *(Phleum Prateuse.)*

One thousand parts of the clover contain about 40 of nutritive matter, of which 31 or 32 are starch, 3 are saccharine matter, 2 are gluten, and 3 are an insoluble vegetable extract.

There are different results obtained by Chemists, in regard to the nutritive qualities of herds grass, some put it down as 100 in a thousand parts.

Now, if we take into the account the number of pounds of each root which is ordinarily obtained from an acre and of the cost of production, an approximation may be had of the comparative value of each crop, and by fairly understanding the matter we shall not be likely to be carried away by our partialities for this or that crop to-day, or by disappointments in regard to them to-morrow.

Top Dressing of Grass Lands.

[FROM THE FARMER'S CABINET.]

Although, as a general rule, manure applied as a top dressing is, in some measure, wasted by sun and air, and given to the winds and waters, still in many cases it will be expedient to apply it to the top of the soil instead of ploughing it under. Sometimes it is inconvenient to plough grass land which may need manure. The soil may be wet and rocky, or otherwise unfit for the plough. In such cases, mowing land should, once in two or three years, have a top dressing

of some manure suitable to the soil. Plaster of Paris is a good top dressing on some grounds and for some plants; and in some cases it has no perceptible effect. M. Candolle, a French writer observes, that plaster acting or operating chiefly on the absorbent system of plants, its effects are not like those of manure buried in the soil, which set principally on the roots. The latter, according to their *particular nature*, divide, soften, enrich, warm or stiffen the soils with which they are mixed. The quantity of plaster spread on lands is so trifling, that it can have little effect on the soil. I speak from experience. "Plaster buried in the earth where sainfoin has been sown, has produced no visible alteration; while the same quantity of plaster spread over the same surface of sainfoin, has produced the most beautiful vegetation." The same writer agrees with other agriculturists in opinion, that plaster operates on plants in a direct ratio to the size and number of their leaves.

There is a difference of opinion among agriculturists with regard to the season at which manure should be applied to mowing ground. Loudon says, "In the county of Middlesex, where almost all the grass lands are preserved for hay, the manure is invariably laid on in October, while the land is sufficiently dry to bear driving of loaded carts, and when the heat of the day is so moderated as not to exhale the volatile parts of the mass. Others prefer applying it immediately after haying time, from about the middle of July to the end of August, which is said so be the good old time, and if that season be inconvenient, at any time from the beginning of February to the end of April."

Lorian says, "If dung be used for top dressing, it should be applied soon after the first crop of grass has been mowed; and before the manure has suffered any material loss by fermentation. The grasses should be suffered to grow till they form a close shade. After this they may be pastured; provided a good covering for them be preserved. This will prevent much exhalation; it will also keep the soil much more open to receive the juices of the manure. As water does not pass off so freely through a close pile of grass, much of the coarser particles of the washings from the manure will be arrested in their progress through it, and much more of the fluids from the dung will sink into the soil. The close covering also greatly favors the decomposition of the litter, and by keeping it flexible, causes it to sink farther into the soil and lie much closer to it. Therefore but little if any of it will be found in the way of mowing the ensuing crop of grass, or of making it into hay; provided the manure be evenly spread over the ground. But as the want of a second crop of hay, and other circumstances, may prevent the cultivator from hauling the dung at the proper time, he may haul and spread it any time before the frost sets in; but not with the same advantage. Still if care be taken in raking up the hay of the ensuing crop, but little of the litter will appear among it.

Orchard Grass.

[FROM THE WESTERN FARMER.]

The Cock's foot grass, (Dactylis glomerata. L.) known in America by the name of orchard grass, is an imperfect perennial, and grows naturally on dry sandy soil. It is a native of the United States. This

grass may be known by its coarse appearance, both of the leaf and spike; and also by its whitish green hue. It is probably better adapted than any other to sow with clover, on lands intended for pasture. Its good properties consist in the early and rapid growth, and its resistance of the drought; but all agree, that to obtain its greatest value, it should be kept closely cropped. Sheep will pass over every other grass to feed upon it. If suffered to grow without being cropped, it becomes coarse and harsh. Col. Powel, of Pennsylvania, after cultivating it ten years, declares it produces more pasturage than any artificial grass he has ever seen in America. After being fed very close, it has been found to afford good pasturage, after remaining five days at rest. It is suitable to all arable soils. It abounds in seeds, which are easily gathered; but on account of its peculiar lightness, (the bushel weighing from 12 to 14 lbs.) the seed should be spread on a floor, and sprinkled with water a day or two before it is sown, that it may swell and more readily vegetate. Two bushels of seed are sown to the acre, or half this quantity with clover. The orchard grass should be cut early, except intended for seed, as it diminishes two-sevenths in value as hay, by being permitted to ripen its seeds. It will bear cutting as early as clover, and the latter swath is very abundant. After preparing the seed for sowing, to mix plaster of Paris is recommended. It is one of the most profitable grasses, and much of its success depends upon the manner of sowing.

We noticed a few days since a small lot of this grass sown the last spring, a part of it had been cut and fed to cattle. Where it had been cut it was coming out again, and promises to make another crop in good time. It will be recollected by those who observed it last season, that the orchard grass stood the drought better than any other; from what we have seen we are disposed to recommend it to our farming friends; but we would sow in land made rich with manure in preference to any other, if we expected to reap immediate benefit.

The Properties and Use of Soil and Subsoil.

[FROM THE GENESEE FARMER.]

Although it has been shewn that there is an intimate connection between the nature and properties of the soil and those of the subsoil upon which it rests; yet we would wish it to be understood that the nature and quality of the materials of which the soil is composed, has not so much to do with its productiveness, as the mere mechanical mixture of its parts, by which it is brought into such a state of friability as to enable it to retain moisture in dry seasons, and give of by filtration its redundant moisture during a continuance of wet weather. When soils are not naturally in such a state of friability, they might be made so artificially by a proper admixture of clay, if too light or sandy; and by an admixture of sandy matter, when too strong and adhesive.

Silicious sandy soils soon decompose the manure bestowed upon them, which is carried off by water and evaporation.

These are called hungry soils.

Soils on a dry porous subsoil are more easily dried by evaporation than when the subsoil is clay or marl.

A dry, light, sandy soil on a clay subsoil, is more productive than on a sandy, gravelly subsoil, and it also supplies the means of its permanent improvement by mixing some of the subsoil with the soil.

"The best constituted soil is that in which the earthy materials, the moisture, and manure are properly associated, and on which the decomposable vegetable or animal matter does not exceed one-fourth of the weight of the earthy constituents."

Putrefaction goos on very slowly in strong adhesive clays, while in sand and gravel the process is very rapid. In quick lime, it is more so than in sand, but carbonate of lime or effete lime retards the process of putrefaction more than sand or clay. All earths have an affinity for, or the power of, retaining the gas or effluvia from the fermentation of animal and vegetable matter which takes place on or near their surface.

None of the primitive earths, when pure or unmixed with others. are capable of supporting vegetable life; they are neither convertible into the elements of plants nor into any new substance by any process naturally taking place in the soil. When they are component parts of the soil, they merely act as mechanical agents for the support of the plant, and prepare a bed in which the roots sink and extend themselves for the purpose of fixing their position, thus forming a natural laboratory in which the decomposition of organic matter is carried on, and where it is reduced to its original elements for the reproducing of plants.

A soil that is formed of nearly equal parts of the three primitive earths, namely, sand, clay, and lime, with a mixture of decomposing vegetable and animal matter, imbibes moisture from, and gives it out to the atmosphere, and has all the principles of fertility which give life and vigor to the plants that grow in it.

The properties of a good soil should be so friable and porous as to permit the roots of plants to strike freely in every direction in search of nourishment, and to allow the superfluous water readily to pass off through the subsoil, but to be sufficiently tenacious to retain moisture for the support of plants when in full vigor.

Fertile soils must be composed of silicious sand, clay, and calcareous matter. "The proportion," Kirwan says, "where rain to the depth of twenty-six inches falls per annum, is fifty-six per cent. of sand, fourteen of clay, and thirty of calcareous matter." But these proportions depend entirely on the climate, the situation, the nature of the subsoil, and other local circumstances. More silicious sand is required in proportion as these circumstances tend to make the soil wet; and more clay, if they tend to make it dry.

The constituent parts of a fertile soil should bear a certain relative proportion to each other; but if any of these prevail or fall short to a certain degree, the soil becomes less productive.

The proper proportion of the primitive earths to form a productive soil under these circumstances may vary from 50 to 70 per cent. of silicious matter; from 20 to 40 of clay or aluminous matters, and from 10 to 20 of calcareous matter.

According as the climate is moist, the soil should be friable and porous; according as it is dry, the soil should be adhesive and retentive.

The most productive soil is that which is so constituted as to maintain such a degree of moisture in very dry, and in very wet seasons,

only to give a healthy supply of it to the plants. Such a soil gives to plants the means of fixing their roots deep to support them during the period of their growth, and allows them to ramify in every direction in search of nourishment, where they may easily abstract the elements of vegetable life without being injured by a redundant or a deficient supply of moisture, during any period of their growth. A constant supply of air and water is necessary to make and keep the soil permanently productive; when the soil is easily made and kept friable, it will also have the power of absorbing, retaining, and decomposing the water, the air, and the organic matter, which may be in its composition, by insensible fermentation, and give up a constant supply of the results of this decomposition for the growth of plants, either at seed time, when they are merely vegetating. In summer, when they are growing with the greatest luxuriance—and in autumn when they are ripening their seeds for harvest.—*Morton on Soils.*

Salt on Insects.

[FROM THE GENESEE FARMER.]

Many of the best Enropean works on agriculture, as an argument in favor of the use of salt as applied to the soil, affirm that it will prove fatal to grubs, slugs, cutworms, and those insects that usually infest the earth about the roots of plants, causing much loss to the farmer, and this opinion has been we believe generally adopted in this country, though without sufficient investigation, perhaps to warrant such a conclusion.

Mr. Howard, who conducts the agricultural department of that paper, the Zanesville Gazette, in replying to the remark of the American Farmer, at Baltimore, "that salt is destructive to the whole insect tribe," gives the results of some experiments made by himself on the subject, which would seem to prove that the efficacy of salt on this point, has been altogether overrated. Mr. H. says:—"In the month of March last, we procured several worms, six of which were the large white, or 'grub' worms, as they are sometimes called; one was a 'wire worm' so called, and one a brown 'cut worm,'—and put them into a stone crock (or jar) filled with rich earth. We calculated the superfices of the earth in the crock, and then strewed salt at the rate of nine bushels per acre. After the expiration of eight or ten days, we took the crock, emptied out the earth on a board, and recounted the worms. We found them all alive and 'kicking,' except the cut worm, which from its habits of crawling on the surface, had, (as we expected he would, ascended and escaped.") The others appeared to have increased in *plumpness*, and were replaced in the crock, and another salting, of the same amount as the first given them. After another week they were re-examined, when they were found in good health. They now received another dose, but the crock was, before another examination, emptied of its contents by an individual who was ignorant of the experiment going on. Mr. Howard ascertained by experiment, that the quantity of salt put on the crock, would if applied to grass sward, totally destroy the grass plant, and the same result was produced on other vegetables with which it came in contact, and hence Mr. H. very rationally

infers that a quantity of salt sufficient to destroy insects would be fatal to vegetation of any kind. That salt is not destructive to all insects, is evident from the fact that many bee keepers are in the habit of placing salt under their hives, and about them, for the use of the bees, as it saves them the trouble of seeking it in muddy and filthy places, which, as the bee is a neat and cleanly creature they are glad to avoid: and it is besides, disagreeable to the worm which is frequently deposited under the margin of the hive. We may remark, that in Europe, when employed as a dressing for crops, it is usually if not always sown upon the soil some few days before the seed is put in, by which time it undergoes a partial decomposition, and benefits instead of injuring the young plants.

Fruit Trees and Evergreens—Berkshire Hogs.

[FROM THE FRANKLIN FARMER.]

A letter from James Allen, Esq. the horticulturist of Bloomfield, (Ky.) to our friend, Joel Scott, Esq. of Woodford, has been obligingly furnished us, from which we are permitted to take extracts. We have taken the following, which will be interesting and useful to the lovers of good fruit.

"Near Bloomfield, June 29, 1839.

Dear Sir,—I think you are wrong in wishing to plant out larger fruit scions than I sent you. I can take thirty scions, three feet high, and no man can beat me more than one year, that plants out larger ones, and my orchard will be more durable than his, and I think I can get the first wagon load of apples.

I have always condemned the practice of planting fruit trees in new earth, as it contains worms, bugs and insects that would injure the trees. I use and recommend old, well-trodden, rich earth.

Two feet is a good depth to dig holes to plant trees in, and care must be taken not to set them more than three inches deeper than they grew in the nursery or forest. Trees are frequently lost for want of hard treading with the feet when they are planted, and I would think you have been too sparing in that way.

I have found manure of every description hurtful to fruit trees; but if it must be used, let it be put in the centre of the rows, and not near the trees.

Judge Buel, of Albany, informs me by letter that within the last three years, he has imported from London, thirty thousand trees. Please see his June No. of the Cultivator, where he gives his list of pears, leaving out nearly all the American kinds. I am not prepared to say that the European fruits are better than our American kinds; but my fancy led me to seek them, which will show that the charm and novelty of having new fruits, induced me to leave the old beaten track which was early established in this country. I now have about one hundred new kinds of apples and pears on trial, and my whole list would fill more than a sheet, judging from the space occupied in my nursery book.

The Gravenstein apple from the Danish dominions; the Mala Carla from Italy; the Swaar from Germany; the Reinette Franche from France, and the National apple from Spain, are probably some

of my best kinds of foreign apples. The Jonathan, Balwin, Columbian, Russet, Hubbardston Nonesuch, Seek-no-further, and Spitzenburg, are some of my best American apples; although I have a long list of apples, of high character, both foreign and native.

I have increased my pears but little, for want of cuttings. However, I have grafted five or six hundred this spring.

Of my new apples, I have about twenty kinds showing fruit this year. The Maiden's Blush, that drew the State premium at Boston a few years ago, is bearing with me this year, and I have thirty or forty apples of that kind to look at. My French apple, Reinette Franche, is showing some pretty fruit, and my German apple, Swaar, is likewise showing fruit this year.

Peach trees do well with me, but they require to be cleaned about the roots early in the spring, and old ashes put plentifully about them, which will make them live twice as long as they would otherwise do, and the fruit is much better.

I am in the market of chance and governed by circumstances by getting so many kinds of new fruits not known here; but with my friends, I deal out new fruits with a sparing hand, until they can be better known. I have enlarged my nursery very much since you saw it, and have now ten acres of ground in young trees. I have a fine list of foreign apples, pears and plums, which is little increased, and my trees from Judge Buel, I can only begin to increase next year. I am fully aware that I am doing much good or harm in Kentucky with the new fruits I have got, that are now the largest half of my list.

I now have trees from England planted out, that have not borne fruit in the United States—amongst them is Knight's Monarch pear.

In Italy, the Mala Carla is thought to be the best apple in the world; and if it has borne in the United States, it has been within the last two or three years. I have not yet increased it. The Gravenstein apple was brought by two sea-captains from Denmark. Whether it has borne in the United States, I am unable to say.

You will find that trees gotten from the forest will never do as well as those that are cultivated. I have raised some of the wild crab apples for my own use, in preference to getting them from the woods.

Respecting Planting Evergreens.

When they are planted out in the common way, but few of them live, which is caused by excessive evaporation. I have received of Judge Buel this spring, two hundred small pines of various kinds, and have them littered with tree leaves several inches deep, and enclosed with small rails, and likewise covered over with small rails, which admit the rain, some dew and frequent watering, and by that mode of treatment I shall lose but few—say less than one-fourth. I am almost a new beginner with ornamental trees, but consider and believe that the Abele (silvery leaved poplar) is the prettiest deciduous tree known, and in my books I find it classed with trees of the largest growth.

I dislike the color of the Berkshire hogs, but am pleased with the cross made with them on our common hogs. I fully accord with you, that stock raising of every kind is beyond its common channel. However, one good it will certainly do—it will bring into market, land, capital, and energy, which Kentucky and her citizens can boast of.

With much respect, JAMES ALLEN.

JOEL SCOTT, Esq.

Watering Plants, Grasses, &c.

[FROM THE GENESEE FARMER.]

In watering plants, the operations of nature should be as closely followed as possible; and this will ever prevent its being applied in excessive quantities, by pouring it upon them, or chilling the plants by its application, while they are relaxed and basking in the heat of a summer sun. The water, too, should never be used as taken directly from a well or spring; the temperature of these is usually too low, and water exposed to the air imbibes always more or less of the gasses that are useful to plants.

Experience proves that water is essential to the prosperity of plants, and during our hot summers, and especially in the cultivation and transplanting of hot-houses or forced plants, the necessity of occasional watering is obvious to all. To have such watering produce the best effect, the temperature should be moderate; the water applied at evening, or when the sun is covered with clouds; and the leaves as well as the roots should feel the shower distilled upon them. If there is any danger of a frost, exposed plants should never be watered towards evening, as from a known law of nature, what little heat plants contain, is rapidly carried off by evaporation, and hence the worst frosts, and those producing the most injury, occur after rains. Sunshine stimulates the vessels of plants to great activity; and according to Dr. Darwin, "if this stimulus of heat be too greatly and suddenly diminished by the effusion of cold water, or by its sudden evaporation, their vessels refuse to act, and death ensues; exactly as has too frequently happened to those who have bathed in a cold spring of water, or taken large draughts of ice fluid, after having been heated by violent and continued exercise during a hot day."

The addition of the carbonaceous nutritive matter from a dung-hill, or the drainings of the yard, has an excellent effect on many plants; greatly increasing the rapidity of their growth, and thus hastening their maturity. Water and heat appear to be the grand agents of vegetation, and one cannot be very much increased without a corresponding increase of the other, unless at the expense of the health and vigor of the plant, or the rendering the fruit worthless. Newly planted fruit trees, or indeed any other trees should be watered, as it greatly tends to secure their living, and promotes their growth. Trees are essentially benefited in a dry time, by throwing water over them with a large syringe or engine; as such an effusion washes the pores of the tree, cleanses the leaves from dust, and invigorates its energies. A fig tree, suspended in a room at Holy Rood Palace in Scotland, flourished for a number of years with no other nutriment than what was derived from a daily watering of the foliage and trunk. Water operates favorably when thrown upon trees, in preventing the increase and spread of caterpillers and other insects.

The practice of watering meadows and grass lands has not been generally practised in this country, but we think that on light soils, where water courses can be brought to bear, it might be done with great advantage. If springs of water are to be turned on to meadows, it may be necessary, however, to determine in the first place that the water contains no ingredients injurious to vegetation, which is sometimes, though very rarely, the case.

There has as yet, owing to the natural fertility of our soils, the neglected state of our agriculture, and the little capital usually invested by the farmers, been but few efforts made to introduce among us the mode of watering grass lands with liquid manures, which are of so much consequence in the best cultivated countries of Europe. Where it has been, as in some of the highly cultivated farms of Pennsylvania and Maryland, the effect has been most beneficial. By this method, large cisterns or vats are so constructed as to receive all the urine from the stables, and the liquid matter from the farm yards. The fluid is pumped from these reservoirs into hogsheads placed in carts drawn by oxen, and conveyed to the fields where wanted. To the cart is attached a box or trough twelve feet in length, the under side perforated with holes, and when on the ground to be watered, a plug is drawn from the hogshead, which permits the water to flow into the trough, by which, as the cart passes along, it is distributed over the surface to the width of the apparatus used. In some cases, these vats or cisterns are so constructed, that the liquid flows from them directly into the hogsheads, and the labor of pumping is avoided. When it is recollected that urine is one of the most active and valuable of manures, owing to the great quantity of various salts it contains, it is clear that such watering of lands must contribute greatly to their fertility. According to Sir John Sinclair, turnips and cabbages are forced in their growth in a most remarkable manner by the use of this substance, applied in the way of watering; but it should be remembered, that in very hot dry weather, this fluid manure should not be used, unless greatly diluted with water.

White Veal in London.

[FROM THE GENESEE FARMER.]

There is no surer indication of a low uncultivated mind, and a cringing, cruel spirit, than barbarity to animals; and when the public taste in any country becomes so vitiated and corrupt as to sanction or require such cruelty to gratify an epicurean appetite, that country is nearly ripe for the domination of a Nero or Cataline. We copy the following from an English work on the 'Obligation and extent of humanity to Brutes,' by Mr. Youatt, the celebrated veterinary surgeon, and writer on cattle, horses, &c. in London. After describing the cruel manner in which calves are sent from one district to another of the country, slung in pairs across horses, with their heads hanging down, and the manner in which they are fed by the 'suckling farmer.' he proceeds:

"These calves are brought up to be converted into white veal. The muscles are all to be drained of blood, and not a blemish is to appear on the skin. The animal is taken carefully out of the cart in which he is brought to London. Let it be supposed that he arrives on a Monday afternoon. He is scarcely got out of the cart before the jugular vein is opened, and the blood is permitted to flow until he falls. The morrow comes, and the bleeding is repeated, and again until he falls; and oftener than otherwise, once more on Wednesday. There are perhaps few of my readers who have not experienced—when largely bled—this seeming dying, and the worse sensations of

returning life. Whoever has passed by the slaughter houses in which these atrocities are committing, and heard the piteous and incessant bleatings of the animal, will never forget the tone of urgent supplication, yet utter debility.

"On the Thursday or Friday he is brought out for slaughter; rolling and staggering from want of strength. A common sling is placed around the hind legs, and he is drawn up into the air, the hind legs uppermost. Sometimes he gets a knock on the head with a poll-axe, but not sufficient to stun him, for the white veal must not be spoiled, and above all things, the head, that choice morsel for the epicure, must not be discolored. A hook is now passed through his muzzle, to which a cord is attached, that goes round the rope by which he is suspended, and by means of this hook the head is drawn backwards and upwards, until its position is in a manner inverted, and no blood can deposit itself in any part of it. The fatal thrust is now, and not till now, given; the jugulars are cut through at one stroke, and the animal soon dies—the object being accomplished that there shall not be a drop of blood in him, or a discolored mark about him. Such are the abominations which are practised in the preparation of white veal; and they will continue until the perverted taste of the public no longer demands that the flesh of the calf shall be rendered pale and insipid, and comparatively void of nutriment."

Mr. Youatt also relates some of the ridiculous observances practiced by the common people in the central districts of the kingdom, which demonstrate, that though the schoolmaster may be abroad, there are parts into which he has not yet penetrated. "In some districts of Yorkshire, about two days before the cow is expected to calve, she is fastened by the horns to the back of a cart and driven sixteen or twenty miles by way of preparing her for parturition. Occasionally the calf is produced by the way; or many a time and oft, she has a most difficult and dangerous labor. This is another of the abuses and cruelties of ignorance.

Curing Hams.

[FROM THE GENESEE FARMER.]

I beg leave to present to the public my manner of preserving hams. I turn my barrel over a pan, or kettle, in which I burn hard wood for seven or eight days; keeping a little water on the head of the barrel, to prevent it from drying. I then pack two hundred weight of ham in my barrel, and prepare a pickle, by putting six gallons of water in a boiler, with twelve pounds of salt, twelve ounces of salt-petre, and two quarts of molasses. This I stir sufficiently to dissolve the salt, &c. and let it boil and skim it. I then let it cool and pour it on my ham, and in one week I have smoked ham, very tender, of an excellent flavor, and well smoked. When the weather becomes warm, there will a scum rise on the pickle. By keeping my ham under pickle, it will keep the year round.

It is better to have a good white oak barrel than any other. Try it, and if ever you had meat smoked earlier after killing, and more palatable, please inform the public through the columns of your paper. Yours, &c. H. FOWLER.

Hanover, Mich. March 7, 1839.

On Raising Calves.

[FROM THE NEW-ENGLAND FARMER.]

Braintree, January 13, 1838.

Rev. Mr. Coleman—Dear Sir—In answer to your inquiries respecting the mode which I have adopted in raising cattle, I can merely say, that I have for ten or fifteen years past, preferred to raise calves that come in the fall of the year, rather than those that come in the spring, for two importrnt reasons: the first, and equally important is, the great saving in expense. Those that I have raised within the above time, have not cost me more than one quarter part so much as those that I formerly raised. They used generally to be with the cow from eight to ten weeks. The usual quantity of milk which they took, was about eight quarts per day each; the common price of milk has been twelve and one half cents per gallon, and four cents per single quart, and more sold by the quart than by the gallon. Upon a calculation you will see that it would cost about seventeen dollars, upon the lowest price of milk, to prepare a calf to go to pasture; in addition, calves that are raised in the spring, generally come in when two years old, which I think too young; the cows are not so good nor so large, and will not hold out so long, having come to maturity too soon.

Another difficulty which arises from letting the calves take the milk from the cow, is, when you turn them to pasture, they are very uneasy, continually bawling after their mother, eat but little, and fall away in flesh, and are often stunted. Those that are raised in the fall or winter, do not generally come in until they are two and a half years old, are much larger and continue good cows much longer. The expense of raising them in the old way, has been so much, that scarcely a single calf is raised in this vicinity. Consequently our farmers have bought their young cattle from droves from different parts of the country, and have had no opportunity to select the breed, the result of which is a *miserable breed of cattle*. Now, sir, the mode which I have adopted, with great success, is, I take my calves (that come in fall or winter) from the cow when three or four days old, (as the case may be), I take a small quantity of good English hay, and make a tea from it; I add a small quantity of milk, and a very little molasses to it. The calf drinks freely, and very soon becomes very fond of it, and having got the taste, will eat hay at three weeks old, with as much eagerness as a calf will usually eat grass at ten weeks old. As they increase in age, I decrease in the quantity of milk, unless I happen to have a large quantity of poor milk. I make the tea pretty strong, and give them about as much as they would usually require of milk, twice a day, with a few carrots cut up fine, and also, as much hay as they will eat. The hay that the tea is made of is not lost, as the cattle will eat it all. I generally have a kettle with hay in it on the fire all the time; a small quantity of hay will make enough for morning and night. I have been very much indebted to the Hon. John Wells, of Boston, for the breed of my cattle; have had them of him; and without exception, I think his breed of cattle is by far the best in this country. I have found no difficulty in selling my cows from fifty dollars to a much higher price. I think a calf

may be raised till it is ten weeks old, in the manner I have adopted, for the small sum of three dollars, the trouble is but trifling. If the above remarks, or any part of them, are of any servico to the public, they are at your service.

With much esteem your friend and humble servant,

MINOT THAYER.

Rearing Calves without Milk.

[FROM THE ALBANY CULTIVATOR.]

We have several inquiries as to the most economical mode of rearing calves. The practice of many, and we are included in the number, is to take the calf from the cow at three days old, and to give it sweet milk ten or fifteen days, and afterwards skimmed milk, with a gill of flour or Indian meal, till it is fit to wean, at twelve weeks old. The following from the Bath Society papers, is perhaps a better, if not a cheaper mode.

"The following is as near a calculation of the expense of rearing my calves, without milk, as I can at present assert. In the year 1787, I weaned seventeen calves—in 1788, twenty-three, and 1789, fifteen. I bought, in 1788, three sacks—(three bushels each) of linseed; I put one quart of the seed to six quarts of water, which by boiling ten minutes, became a good jelly; this jelly is mixed with a small quantity of tea of the best hay, steeped in boiling water.

"Having my calves to drop at different times, I did not make an exact calculation of the expense of this hay-tea; but out of my three sacks of seed, I had better than two bushels left at last. I gave them the jelly and hay-tea three times a day. To the boy who looked after them, 6d, (11 cents) per day; the price of the linseed was 4s. (say $1) a bushel; the whole three years' feed £2 5s. $10. My calves are kept in a good growing state, and are much better at this time than my neighbors, that are reared by milk; they do not fall off so much when they come to grass."

We beg of our dairy folks, who are in the habit of murdering their calves at their birth to save milk, to try the above mode. Here were fifty-five calves raised at an expense, in linseed jelly, of about eighteen cents each, with hay-tea and attendance, as cheap here as in England, without a particle of milk. If interest does not prevail, humanity should.

As a cure for *scouring* in calves, mix a ball of wheaten flour and chalk with gin, and give them—or lay before them a lump of chalk, which they can lick.

To young calves, the food, be it sweet or skimmed milk, hay-tea or linseed milk, as it is called, should be given of temperature similar to cows milk when first drawn; as they advance in age, the heating may be gradually dispensed with, and whisps of hay should then be placed before them, in order to induce them to eat. Barley, Indian corn and oat-meal may be given in small quantities in their drink, and increased as they advance in growth. Beets, shreded fine, are said to be excellent for calves, when they get four or five weeks old.

Observations on the use of the Gum Elastic, proposed instead of Iron for Shoeing Horses.

[FROM THE FRANKLIN FARMER.]

Several objections may be suggested against this project. It would seem necessary that the horse's foot should be covered as high as the fetlock and fastened there with thongs or straps of the same material. Now it is well known that gum elastic becomes very hard and compact in winter, at which time it would confine and impede the artlculation of the pastern. In warm or rainy weather, the gum dilates or stretches, and becomes very slippery, as every one who has worn shoes of that material has experienced, and a horse thus shod would be exposed to fall down when walking in muddy or wet ground, or would soon lose his gum shoes. It is well known that linen or cloth imbued with it, is water and air proof; and gum elastic employed as a covering for a horse's foot would exclude the external air, and at the same time would prevent the perspiration that exudes from the foot from evaporating, and thereby heat the foot and hoof, and dry them so as to be prejudicial to the horse. The hoofs have often required greasing, because a horse standing in a dirty stable, collects manure between the shoe and the foot, which becomes soft, at first excites transpiration, and at last hardens the hoof, and produces a great many disorders. It seems more proper, to leave the gum elastic for many other useful purposes, and not to let it be trodden under horses feet.

W. MENTELLE.

Dead Branches.

[FROM THE GENESEE FARMER.]

Last year we found that one of our apple trees, (a fine Seek-no-farther, graft,) owing to injurios sustained by the bark of the body, had partially perished, and that many of the branches were wholly dead. Remembering that we had formerly lost trees from the same cause, and believing that the dead branches operated perniciously on the remaining vitality of the tree, we had them thoroughly cut out, with all such others as exhibited symptom of decay. This was done in the spring, and the remaining branches soon became vigorous, and gave an abundant supply of fine fruit. This spring the tree appears well and will continue to flourish, most probably.

The effect of allowing dead branches to remain on a tree, is shown by a decay of part of the trunk, frequently from the insertion to the roots, a result which could hardly have happened, had the dead limb been amputated in season, and an opportunity afforded for the renovating powers of nature in healing the wound. Whether, as is maintained by some a dead branch is more exhausting to the tree by its constant absorption of sap, than a living one, we do not know; but reasoning from facts and analogy, it may be safely affirmed, that a fruit tree can never be in a healthy fruit bearing condition, while the top is encumbered with decaying branches, to vitiate the sap, the circulating vital fluid of the tree. Careful judicious pruning is of great advantage to trees; but the excision of all dead branches should be attended to, whether a general pruning is performed or not.

Texas.—Public Lands, Emigration and Slavery.

[FROM THE AMERICAN FARMER.]

In a late number, some proceedings of the last Legislature of Texas, in regard to the public lands, were merely hinted at, as having the appearance of improvidence. Allusion was made particularly to an act passed 4th January, 1839, regulating the manner and extent of land to be allotted to actual settlers, and also a large grant made to a man of the name of O. de A. Santangelo, for public services.

If we take the history of settlement in the Great Central Valley of North America, as an inexhaustable source of documentary argument, it will be found that the real cause, or rather the primary cause, why population has so rapidly poured into these regions, has been the cheapness, and not the gratuitous acquirement of land. Among the most beneficial measures of our general government was that by which the public domain was previously surveyed before sold, but the gradual abatement in price is far from being so obviously wise or salutary. Land is property, and when conveyed to individuals certainly ought to be transferable at the will of the owner; that it should be made liable to execution and sale for debt is another question. Let the matter, however, be stated as it may, rapid and wholesome emigration to a new country depends on other and more intrinsic causes than the mere legal regulations in regard to landed property alone.

My attention, though long turned on emigration, was forcibly exercised on the subject by recent debates in Congress on our public land. During these debates I was really surprised to read, from men whose situation was so favorable to gain more correct views, the stress they placed on their enactments, whilst a cursory analysis of the census tables would have enabled them to demonstrate how secondary are fluctuating acts of legislation in producing the general effect. These considerations led me to investigations which they ought to have made, and the general results are here given.

In 1790, the entire population of the United States was made by the census, 3,929,328, say in round numbers *four million*. At the same epoch, and according to the same authority, there were, in

Western New-York,	75,000
Western and Northern Pennsylvania,	91,762
Western Virginia,	36,447
Kentucky,	73,077
Tennessee,	35,791
Louisiana, Florida, and other parts of the Central Valley, now included in the domain of the United States, but not included in census of 1790, allow	87,923
Amount,	400,000

In this table, the allowance made for the population of the interior in 1790, is rather too high, but will answer for all general purposes, and by the table and prefatory observations, we find that about half a century past, there were hardly one-tenth of the aggregate population placed westward of the main spine of the Appalachian mountains.

A very erroneous, though deep impression seems to exist with legislators, that they can, by their enactments, influence the emigration of the Anglo Saxons of this continent. In Congress, whenever the land laws are under debate, we hear this or that measure supported or opposed, as they may be calculated in the opinion of the speakers to retard or facilitate emigration. When recurrence is had to the census returns—the only safe document on the subject—it is at once shewn that the fancied influence of legislation is, if not null, at least trifling.

The following exhibits a general aggregate view of the decennial progress of population in the United States for forty years from 1790 to 1830, and a like view of the advance of interior population during the same period:

1790	Aggregate population,		3,929.827	Increase per cent.
1800	do.	do.	5,305,941	35
1810	do.	do.	7,230,814	36
1820	do.	do.	9,638,191	33
1830	do.	do.	12,866,020	33

Interior Population.

1790	400,000					
1800	966,429	Increase	per cent.	in	10 years,	241
1810	2,041,929	do.	do.		do.	200
1820	3,500,840	do.	do.		do.	171
1830	5,689,208	do.	do.		do.	161

Ratio of Western increase during 40 years, 589.

Now these forty years, formed a period of peculiar vicissitude. Two destructive Indian wars raged along the frontier, and yet we see in the first ten years the population more than doubled; that in the second it doubled, and though diminished in a considerable degree, still advanced at a rate which would double in about sixteen years.

This general effect was thus constantly progressing over a space more than equal to France, Holland, Belgium, and the Spanish peninsula, and on sections where land tenure varied excessively. Land was obtained by purchase at from what we will say, ten dollars per acre and downwards, it was given away under settlement and pre-emption right, or held by old grants; still the population poured into the void.

These statements are made to shew that there is really no necessity to lure settlers to a new country by *bestowing upon them the soil.* Well convinced I am, that had the United States held public land at *two dollars* per acre, and demanded prompt payment, admitting purchases as low as quarter sections, that the settlements in the interior would have been very little retarded, and much confusion and trouble avoided.

Texas is, it must be conceded, in a different situation from that of the United States; the greatest need of the former is men and money. If she combines the resources possessed by means of her public lands, both wants may be supplied. Experience is the cheapest of all knowledge if it is obtained by importation, but the most expensive if obtained by domestic manufacture. The institutions and also the errors of the United States, political and financial, are mines open to the Texians, and from which they may extract invaluable materials. They may there find the value of their lands by reflection. They may there discover that there are more powerful motives to emigra-

tion than the mere acquisition of land, strong as may be that motive. Let them establish *the full security of another species of property especially*, which is weakening in the United States, and they will be under no necessity to give away their land for settlement. If Mr. Henry Clay deserves peculiar credit for any particular service in a series of illustrious efforts in the cause of his country, and of general liberty, it is for his enlightened and magnanimous exertions to prevent the idle, foolish, and criminal waste of the public domain.

Let us advance to a still more delicate subject—*Slavery of the African race!*

In a single paper we cannot enter into a special view of slavery and freedom, as antagonist terms, but we may lay down from history some general principles consecrated by time and undeniable. In the first instance, let any person turn his attention to a map of the eastern continent, with the history of the world under his hand, and suppose that the regions inhabited by the Caucassian and Mongolic nations or families, were stript of the human race, and left so for *one* or even *two thousand* years, would not the works of man appear even at the end of the longest period? Yes! scarce any assignable length of time would be adequate to obliterate the remains of cities, edifices, bridges, inscriptions, pyramids, and coins which would mark a once immense civilization in Europe and Asia, as in the Caucassian part of Africa. Let a similar imaginary view be taken of Negroland, confined in time to *one hundred* years, and what would remain? Why nothing more remarkable, if as much so as the barrows of Central North America.

In contact less or more with the Caucassian nations from the dawn of history, the negro has never erected an edifice with any approach to the grandeur of those found in both Mexico and Peru, when discovered by the Spaniards; they have never organized a civil government above that of barbarous hordes; nor has that race ever produced a single book worth preserving. Such contrasts resting on the facts of near four thousand years of history, can never be contradicted or explained away by theories. We might go to individualize, but we need not advance beyond our own country, which indeed affords the most conclusive evidence on this subject ever brought into existence. Let us test it by the best proof, the census tables.

Table of the Colored or African race in the United States, by the census taken 1790, 1800, 1810, 1820 *and* 1830.

1790	N'h of Maryland,	67,788,	So'h of Maryland, inclu.	689,884
1800	do.	81,525,	do.	916,321
1810	do.	99,227,	do.	1,277,311
1820	do.	110,639,	do.	1,661,036
1830	do.	125,193,	do.	2,203,433

1790 to 1800, ratio of increase of colored persons,	N. 1.21, S. 1.32
1800 to 1810, do. do.	N. 1.21, S. 1.38
1810 to 1820, do. do.	N. 1.11, S. 1.3
1820 to 1830, do. do.	N. 1.13, S. 1.32
1790 to 1830, do. do.	N. 184, S. 319
1790 to 1830, ratio of increase of the whites in the U. States,	332
1790 to 1830, ratio of increase of the whole African race in the United States, - - - - - - -	307

Here is document applicable to all climates and places, where the Caucassian and African races may be residents of the same soil. It is

a document of the utmost value to every community, and most strangely overlooked. From one extreme of the United States to the other the African has been subjected to the experiment of freedom and slavery contrasted, and what is the result? Why that in one section in which they have been gradually emancipated, they have not doubled their numbers in forty years; whilst, where in a state of slavery in the opposite section, they have more than tripled.

An opinion or assertion, either ignorantly or dishonestly put forth, and very generally accredited, is, that the black increases more rapidly than the white, which is so far from being the case, that though all the mixed blood is given to the former, still his increase, under the fostering care of the white man, is only as 307 is to 332. Another opinion, no better founded and propagated in like manner, and much more mischievous, is that the blacks exceed the whites in the Southern States or Slave States: whilst in fact the latter, even there, is in excess as 4 to 3 at least; Louisiana and South-Carolina being the only two States in the Union in which the colored race predominates.

If either law, reason, religion, or common sense, or all together were regarded by the pretended friends of the negro, they would commence by a retrospective view of history, and as their field of labor is now principally directed to the United States, they should examine what effect had already been produced by his *quasi* freedom. The physical qualities of the race would be carefully examined, and his fitness to enjoy and exercise freedom tested by his progress in that condition. Were the leaders of the abolition scheme influenced by their pretended notions, such would be their line of proceeding; but the pretences are one set of categories, and real motives another. The British Government could not have been driven by fanaticism to ruin their West-India colonies, had not sinister action on the United States been viewed in perspective; nor have the men who committed the great iniquity been altogether disappointed, as very sinister effects have been produced on the United States.

You will say, what benefit can Texas derive from these reflective views? I answer, let Texas do in the outset what the Convention which framed the Constitution of the United States ought to have done; *make it an article of constitutional law, that the Legislature shall not touch any question, or receive any paper in any form, leading to either the freedom or colonization of African slaves.* In the present condition of the human mind *there is no middle course with safety.*

By our Constitution, if its provisions were rationally construed and obeyed, the general legislature would be restrained from yielding to a bigoted or wilful abuse of the right of petition; but from the shameful omissions of that instrument, and from the vagueness of many of its provisions every one of the highest interests of the nation are left the sport of theory or profligate ambition. As we have conducted for four or five years past, there is but one right actually acknowledged, and that is petition. Admit the right in such unlimited extent as claimed and admitted on the floor of both houses of Congress, there is but that right left; as the receiving and power of complying with the tenor, must be at the bottom of all rational definitions of the term petition. On this subject, many of the Southern members of Congress were guilty of the most flagrant absurdity. The moment they admitted the unlimited right, or "*sacredness of petition,*" as the language on the subject expressed, they virtually acknowledged the right

claimed. Had the Constitution of the United States to be now formed by a compact amongst the same original parties, an effectual bar would be placed before agitators, and deliberative bodies forbid to debate questions amounting to an inquiry whether the social structure under which they were themselves sheltered, should or should not be overturned.

Now as far as experience goes, Texas stands precisely in the condition these States would be in, as regards the slave question, were a Convention now to meet in Washington to revise the old or frame the new Constitution. Here I must advance to a position, which would were it known, expose me to virulent persecution; but so impressed am I with the correctness of my induction that I boldly predict, that thirty years will not come round until not only the folly, but the criminality of placing the wool-covered race in freedom, and on an equality with the whites, will be received and acted on as a physical truth. Nor have I the smallest doubt but that those Constitutions now made to stay the acknowledgment of such equality, will be considered in the next age as instances of profound foresight.

Let Texas but provide against the infringement of this as of all other property, and leave the African where he has every where been most safe and happy, under the protection of the white man and of Christianity, and the public land of that Republic need not be awarded to individuals for no other consideration but settlement.

Many who would otherwise applaud the principle, would pronounce what I recommend a bold measure; and so I regard it; but I also consider that the circumstances of the case, not simply afford justification, but also imperatively command its adoption. Again, and again, I must say, *no middle cause, nor timid half-way measures can suit Texas.* The smallest concession to that blind fanaticism which is now disturbing and threatening the United States, will lose to Texas the confidence of *the only friends she possesses, and prevent the migration of the very species of population which best suits her soil and climate.*

In brief let Texas make slavery as all other general and permanent interests, only subject to the general will of the whole people by Convention called expressly for that purpose, and deny the discussion of its inviolability to any Legislature under any pretence. How much heart-burning and real danger would our country have been saved from by such provisions? Let Texas indeed regard our Constitution as a beacon or rock to avoid, rather than a haven. In place of deceptive abstractions, let them frame their Constitution on reality, and not commence it with a preamble at variance with the whole tenor of history. Let them act as if they were acting with and for human beings. Let them not give unlimited power to Legislatures or presidents; nor permit demagogues to disturb and distract society with attempts to undo the works of the Deity himself.

Advice of a Father to his only Daughter, written immediately after her Marriage, by THOS. JEFFERSON.

[FROM THE AMERICAN FARMER.]

MY DEAR DAUGHTER—You have just entered into that state which is replete with happiness or misery. The issue depends upon that prudent, amiable, uniform conduct, which wisdom and virtue so strongly recommend, on the one hand, or on that imprudence which a want of reflection or passion may prompt on the other.

You are allied to a man of honor, of talents, and of an open, generous disposition. You have therefore in your power, all the essential ingredients of domestic happiness: it cannot be marred, if you now reflect upon that system of conduct which you ought invariably to pursue—if you now see clearly the path from which you will resolve never to deviate. Our conduct is often the result of whim or caprice, often such as will give us many a pang, unless we see, before hand, what is always most praiseworthy, and the most essential to happiness.

The first maxim which you should impress deeply upon your mind, is never to attempt to control your husband by opposition, by displeasure, or any other mark of anger. A man of sense of prudence, of warm feelings, cannot, and will not, bear an opposition of any kind, which is attended with an angry look or expression. The current of his affections is suddenly stopped; his attachment is weakened; he begins to feel a mortification the most pungent; he is belittled even in his own eyes; and be assured, the wife who once excites those sentiments in the breast of a husband, never regains the high ground which she might and ought to have retained. When he marries her, if he be a good man, he expects from her smiles, not frowns, he expects to find in her one who is not to control him—not to take from him the freedom of acting as his own judgment shall direct, but one who will place such confidence in him, as to believe that his prudence is his best guide. Little things, that in reality are mere trifles in themselves, often produce bickerings and even quarrels. Never permit them to be a subject of dispute; yield them with pleasure, with a smile of affection. Be assured that one difference outweighs them all a thousand times. A difference with your husband ought to be considered as the greatest calamity—as one that is to be most studiously guarded against; it is a demon which must never be permitted to enter a habitation where all should be peace, unimpaired confidence, and heartfelt affection. Besides, what can a woman gain by her opposition or indifference? Nothing. But she loses every thing; she loses her husband's respect for her virtues, she loses his love, and with that, all prospect of future happiness. She creates her own misery, and then utters idle and silly complaints, but utters them in vain.

The love of a husband can be retained only by the high opinion which he entertains of his wife's goodness of heart, of her amiable disposition, of the sweetness of her temper, of her prudence, of her devotion to him. Let nothing, upon any occasion, ever lessen that opinion. On the contrary, it should augment every day: he should have much more reason to admire her for those excellent qualities

which will cast a lustre over a virtuous woman when her personal attractions are no more.

Has your husband staid out longer than you expected? When he returns receive him as the partner of your heart. Has he disappointed you in something you expected, whether of ornament, or of furniture, or of any conveniency? Never evince discontent; receive his apology with cheerfulness. Does he, when you are housekeeper, invite company without informing you of it, or bring home with him a friend? Whatever may be your repast, however scanty it may be, however impossible it may be to add to it, receive them with a pleasing countenance, adorn your table with cheerfulness, give to your husband and your company a hearty welcome, it will more than compensate for every other deficiency; it will evince love for your husband, good sense in yourself, and that politeness of manners, which acts as the most powerful charm. It will give to the plainest fare a zest superior to all that luxury can boast. Never be discontented on any occasion of this nature.

In the next place, as your husband's success in his profession will depend upon his popularity, and as the manners of a wife have no little influence in extending or lessening the respect and esteem of others for her husband, you should take care to be affable and polite to the poorest as well as the richest. A reserved haughtiness is a sure indication of a weak mind and an unfeeling heart.

With respect to your servants, teach them to respect and love you, while you expect from them a reasonable discharge of their respective duties. Never tease yourself or them, by scolding; it has no other effect than to render them discontented and impertinent. Admonish them with a calm firmness.

Cultivate your mind by the perusal of those books which instruct, while they amuse. Do not devote much of your time to novels; there are a few which may be useful and improving in giving a higher tone to our moral sensibility; but they tend to vitiate the taste and to produce a disrelish for substantial intellectual food. Most plays are of the same cast; they are not friendly to the delicacy which is one of the ornaments of the female character. History, geography, poetry, moral essays, biography, travels, sermons, and other well written religious productions, will not fail to enlarge your understanding, to render you a more agreeable companion, and to exalt your virtue.

A woman devoid of rational ideas of religion, has no security for her virtue; it is sacrificed to her passions, whose voice, not that of God, is her only governing principle. Besides, in those hours of calamity to which families must be exposed, where will she find support, if it be not in her just reflections upon that all ruling Providence which governs the universe, whether inanimate or animate. Mutual politeness between the most intimate friends is essential to that harmony which should never be once broken or interrupted. How important then is it between man and wife! The more warm the attachment, the less will either party bear to be slighted, or treated with the smallest degree of rudeness or inattention. This politeness, then, if it be not in itself a virtue, is at least the means of giving to real goodness a new lustre; it is the means of preventing discontent, and even quarrels; it is the oil of intercourse, it removes asperities, and gives to every thing a smooth, an even, and a pleasing movement.

I will only add, that matrimonial happiness does not depend upon wealth; no, it is not to be found in wealth; but in minds properly tempered and united to our respective situations. Competency is necessary; all beyond that point, is ideal. Do not suppose, however, that I would not advise your husband to augment his property by all honest and commendable means. I would wish to see him actively engaged in such a pursuit, because engagement, a sedulous employment, in obtaining some laudable end, is essential to happiness. In the attainment of a fortune, by honorable means, and particularly by professional exertions, a man derives particular satisfaction in self-applause, as well as from the increasing estimation in which he is held by those around him.

In the management of your domestic concerns, let prudence and wise economy prevail. Let neatness, order, and judgment be seen in all your different departments. Unite liberality with a just frugality; always reserve something for the hand of charity, and never let your door be closed to the voice of suffering humanity. Your servants, in particular, will have the strongest claim upon your charity; let them be well fed, well clothed, nursed in sickness, and never let them be unjustly treated.

The Pocket Farrier.

[FROM THE NEW-ENGLAND FARMER.]

Try before you buy.—If you meet with a horse you like, and are desirous of buying him, do not fall in love with him before you ride him. for though he may be handsome he may start or stumble.

To discover a stumbler.—If you buy of one who knows you, it is not unreasonable to desire to ride for an hour. If refused, you may suspect he has some faults; if not, mount him at the door of the stable where he stands; let him neither feel your spurs, nor see your whip; mount him easily, and when seated, go gently off with a loose rein, which will make him careless; and if he is a stumbler, he will discover himself presently, especially if the road in which you ride him be any thing rough.

The best horse indeed may stumble (a young one of spirit, if not properly broken in, will frequently; and yet if he moves nimbly upon the bit dividing his legs true, he may become a very good saddle horse;) the best horse, I say, may stumble; but if he springs out, when he stumbles, as if he feared your whip or spur, depend upon it he is an old offender. A horse should never be struck for stumbling, or starting; the provocation, I confess, is great, but the fear of correction makes him worse.

In the purchase of a horse, examine four things—his teeth, his eyes, his legs, and his wind.

To know his age.—Every treatise on farriery has instructed us to know a horse's age by the marks in his mouth; but no one in five hundred (a dealer excepted) can retain it in mind.

Every horse has six teeth before in each jaw, until he is two years and a half old, they are all smooth and uniform in their upper surface.

At two years and a half old he sheds the two middle teeth, (by the young teeth's rising and forcing the old one's out,) which at three years old are re-placed by two hollow ones.

When he is about three years and a half old, he sheds two others, one on each side the two middle ones, which at four years old are replaced by two others, which are also hollow.

The sharp single teeth in horses, begin to appear in the lower jaw when the horse is about three and a half, or four years old, they are full grown, pointed, and concave in the inside.

When he is four years and a half old, he sheds the two corner teeth, which at five are replaced also with two hollow ones, grooved on the inside, which groove marks the age precisely.

At six years of age this groove begins to fill up, and disappear; so do the hollows of the rest of the teeth, which continue till near seven and a half or eight years old, when all the teeth become uniformly full and smooth.

Crafty jockeys will sometimes burn holes in the teeth to make them appear young, which they call bishoping; but a discerning eye will soon discover the cheat.

Eyes.—If a horses eyes are lively and clear, and you can see to the bottom, and the image of your face be reflected from thence, and not from the surface of the eye, they are good, but if muddy, cloudy, or coal black, they are bad.

Legs.—If his knees are not broken, nor stand bending and tumbling forward (which is called knuckling,) his legs may be good; but if he stops short, and digs his toes in the ground, it is a sign he will knuckle. In short if the hoof be pretty flat and not curled, you need not fear founder.

Wind.—If his flanks beat even and slow, his wind may be good, but if they heave double and irregular, or if (while he stands in the stable) he blows at the nostrils, as if he had just been galloping, they are signs of a broken wind. Deceitful dealers have a draught which they sometimes give to make a horse breath regularly in the stable; the surest way to judge of his wind is to give him a good brushing gallop, and it is ten to one, if his wind be broken, or touched, that he will cough and wheeze very much, and no medicine can prevent him doing so.

Cure for broken wind.—A broken wind may be cured, if the following be applied on the discovery of it: A quarter of a pound of common tartar, and the like quantity of honey; beat them well together, then dissolve them in a quart of new milk; let the horse fast two hours before you give the drench; walk him an our after, and let him fast two hours; give this drench every second day with warm meat and drink.

A Draught Horse.—A horse with thick shoulders and a broad chest laden with flesh, hanging too forward, and heavily projecting over his knees and feet, is fitter for a collar than a saddle.

A Saddle Horse.—A horse with thin shoulders and a flat chest, whose fore feet stand boldly forward and even, his neck rising semicircularly from the points or those thin shoulders to his head, may justly be said to have a light fore-hand, and be fitter for a saddle than a collar. As most horses in the hands of farmers are drawn while they are young, which notwithstanding their make, occasions them to move heavily; if you desire a nimble footed horse, choose one that has never drawn.

In buying a horse, inquire into four other things viz:—biting, kicking, stopping, and starting.

A horse may be sound, though guilty of all four, which you can hardly discover by barely looking at him; so I refer you to his keeper.

When you are buying it is common for the owner to say in praise of his horse, that he has neither splint, spavin, nor windgall.

That you may not be imposed upon, those three are thus described:

The splint.—The splint is a fixed callous excrescence or hard knot, growiug upon the flat of the in or outside (and sometimes both) of the shankbones; a little under and not far from the knee, and may be seen and felt.

To take it off shave the part, and beat it with a stick, prick it with a nail in a flat stick, clap on a blistering plaster as strong as you can make it, let it lie on three days; then take it off, and rub the place with half a drachm of the oil of origanum, and as much oil of vitriol, mixed: if the first does not do, rub it a second time with the oils; if you find any remains of the splint, apply a second blistering plaster for twenty-four hours: walk him moderately to prevent any swelling or exerescence from setling.

Most young horses have splints, more or less, and they will occasion lameness while they are coming upon the bone; but after they are grown to the firmness of bones, they do not lame a horse, nor is such a horse worse for use, though he may not look so well to the eye.

The spavin.—The spavin is of the same nature, and appears, in like manner, on the instep bone behind, not far below the hough. To take it off, beat the bone with a bleeding-stick, and rub it; then anoint it with the oil of origanum, tie a wet cloth about it, add with a hot brick applied to it, soak in the oil, till it be dry.

Windgall.—Windgalls are several little swellings just above the fetlock joints of all the four legs; they seem, when felt, to be full of wind or jelly, but they never lame a horse: the splint and spavin always do. They all three proceed from one and the same cause, which is hard riding, travelling too far in one day, or carrying too great a weight when young.

Birds on Farms.

[FROM THE FARMER'S CABINET.]

The value of birds in dristricts settled as thickly as the county of Philadelphia, is appreciated by but few individuals. The beauty of their plumage delights the eye: their song cheers the husbandman in his toil, and gives a charm to the country which no resident can too highly appreciate. The joyous twitter of the swallow and the martin, the song of the blue bird in the spring, the delightful wild notes of the patridge, the lark, the plover, the robin, the thrush, the mocking-bird and the sparrow, awaken an interest in those companions of the farmer, which should impel him to prompt and energetic exertions for their preservation. And let me ask, was there ever a time when these interesting creatures demanded protection more than at the present period?—In this county our farms are overrun by parties of worthless boys, and more worthless men, who employ their time in destroying whatever comes in their way. They break our fences, alarm and very often injure our cattle; jeopardise the lives and limbs of our people, and the teams with which they are at work, and many of them do not hesitate to plunder us of our poultry when an opportunity offers. They tread down our crops and injure and annoy us in various ways

and all for the ostensible purpose of destroying the few birds which yet remain with us, which are not worth to them the cost of the powder and shot used in their destruction. When our horses are alarmed and become unmanageable in consequence of their firing, they very often refuse to abstain from what they denominate their sport; and my people have been compelled to leave their work for fear of some serious accident, and still they would persevere. Let us no longer submit to such annoyances and injury, but assert our rights boldly and fearlessly.—There is a law which applies to this county, which, if put in force, is abundantly sufficient to afford our birds protection, and to rid us of this intolerable nuisance. The value of birds to a farmer, few are able to estimate. To say nothing of the songs of those warblers, to which I always listen with delight, their value in the destruction of bugs, flies, worms, and noxious insects, is incalculable. The swallow the martin and many others, busily employ themselves in destroying mosquitoes, flies, and other tenants of the air, which annoy us with their sting, or injure us in other respects.

The robin, woodpecker, sapsucker, and various other birds, protect our orchards, destroy the worms and insects that there do us mischief, and in their absence there is no little labor required to protect and save the trees which their industry alone would relieve us from. Besides they do their work better than we can. The presence of a worm in a young tree is only indicated to us by the borings thrown from the orifice made by his entrance, and in removing them with a knife serious injury is done to the tree. The bird, on the contrary, eats the egg, destroys the worm when young, or if he has avoided his vigilance and got under the bark, nature has endowed the two last mentioned with a strong bill with which to strike through the bark, and long and rough tongues with which to drag the lurking villain from his hiding place, and that too with the least possible injury to the tree. Where is the farmer who has not seen his apple trees perforated along the whole length of their trunk by these industrious laborers; and who has not seen such trees distinguished for their health and fruitfulness.

I can recollect when there was large orchards of healthy trees in parts of this county where it is now almost a folly to rear an apple tree. Those orchards that are near clumps of wood, may still exist here, but where there is no such harbor for birds designed for their preservation, it is vain to attempt to rear a tree and preserve it against the destructive ravages of the insects that feed upon it.

The patridge, the plover and the lark, too, feed upon insects and labor diligently to promote the interest of the farmer in destroying his enemies. What gives a man more pleasure than when walking over his grounds, he is welcomed by the shrill whistle of the patridge, who, grown familiar with his friend and daily companion, cheers him in his toil and delights him when at leisure?

These birds I have often seen so tame that they would scarcely leave my path, and I remember a covey that during one winter, would frequently come to my gravel walk to receive the feed that was placed there for them. They amounted to about twenty, and I set a high value upon them: but there came upon my farm, during my absence, two gunners with their dogs, and destroyed them all. I assure you I felt the loss of those birds more than I would that of the best horse in my stable.

For myself, I feel in regard to my birds as the ancients did of their household goods; nor can I controll a feeling of indignation and a sense of injury, when I see my neighbors or strangers wantonly des-

troying them upon my premises. There are many depredators in our wheat fields that are destroyed by the patridge, for it is on these he feeds. The lark and the plover do their work in our grass lands. The sparrow, blue-bird, wren and other small birds, labor diligently in our gardens, orchards and pleasure grounds, and they should be welcomed as agreeable visitors by all who reside in the country.

Boxes for their accommodation should be nailed to the trees and by carefully avoiding to alarm them, and other kind means, they could be domesticated among us. They will otherwise take to the woods and by-places and we shall be deprived of the pleasure of listening to their cheering songs, and lose the advantage of their incessant labors.

Farmers, think of this. Let us not be unkind to our neighbors, nor deny them reasonable privileges, but do not continue to refrain from expressing a sense of injury at their depredations, and of making known to all the high value we set upon our birds.

Timber for Fencing.

[FROM THE GENESEE FARMER.]

Mr. Editor:—As it is a time light is expanding, and farmers are becoming more free to communicate their several stocks of knowledge and experience, and you have interested yourseif so much to collect information and arrange it in such a manner, that it may be compared to a great reservoir, or public storehouse, to which we can resort for almost any important information which is necessary to our cocerns, I cast in my mite, which is relative to the choice of trees for culture.—This country is much lacking in durable timber for fences, &c., yet the yellow locust and native mulberry are easily propagated, and almost incorruptible to last as fence posts; having been taken up for examination upon Long Island, after having been used fifty years as gate posts, and then were found to be sound enough, to all appearance, to last fifty years more. My informant I think told me the truth, as I suppose he is a man to be believed. Mr. Samuel Wiman, in this town, informed me about two months since, he had a native mulberry bar post, which had stood thirty years; that it was still strong in the ground, though the holes for the bars to run in were worn out, which spoiled the post. The yellow locust and native mulberry are of so rapid a growth, if they are cultivated with care, that though a fence were built of basswood, I think by the time a new one would be necessary, the timber would be grown to sufficient size to make posts to board to, on a good soil. I measure my ground and set my locust trees fourteen feet apart, in order to have them for posts as they grow. If my brother farmers will follow the preceeding method, instead of any other method, or kind of trees, I have seen described, I think that as much good would result from the operation as for hedges twice told, or any other operation of a like amount of cost and labor.

H. SEELY.

PART III.

MISCELLANEOUS INTELLIGENCE.

Carolina Silk.—We saw a day or two ago a box of reeled silk made by Col. Hugh Craig, at Chesterfield, C. H. The silk weighed 15 lbs. and is a splendid article. We wish some of those who denominate what they are pleased to call the silk fever and multicaulis mania, a "humbug" could have seen it. It would have scattered their doubts to the winds. Col. Craig has been engaged in the silk culture, on a small scale, for experiment, the last several years. He has made 13 or 14 lbs. annually for four or five years past, and this year he calculated to make 100 lbs. for which he had provided abundant foliage; but through an oversight in putting up his eggs he lost the greater part of them. He sold his silk last year for $5 50 cents per pound, and could have got $6 but for a slight defect in the reeling; and he thinks the cost of making, less than $2. But as he has promised, at our request, to furnish for our columns a statement of his experience in the business, we forbear to enter into further particulars.—*Cheraw Gazette.*

Mammoth Eggs.—Among other remarkable productions of the day, we have seen none more so than a couple of eggs—hens eggs—in the office of J. S. & T. B. Skinner. They are from hens which cost $5 each, and which are, in the body, the size of the cock of the common breed.

Every egg is full of meat, to a proverb, but the eggs of the Ostrich breed contain *more than double as much meat* as the egg of the common barn-door fowl. This is not stated at random. One of each was weighed in the Chesapeake Bank by troy weight on the 22d inst. The egg of "speckle" of the Ostrich breed weighed 3 oz. 1 dwt. and 10 grains. the half of which would be 1 oz. 10 dwt. and 17 grains; whereas the egg of the common hen weighed but 1 oz. 8 dwt. and 14 grains. Now those who apply in time may have a young cock and two pullets of this breed, for $10, which is one-third less than the cost of their progenitors, and and only the price of ten Rowan potatoes in Philadelphia last season.—*American Farmer.*

The Morus Multicaulis.—What is the latest period at which the Morus Multicaulis can be planted?—If the trees are kept in a good state of preservation, they may in this latitude and south of us be safely planted as late as the 20th of May. We commenced planting last year on the 10th of May, and finished on the 14th, and our trees were well matured. We desired to get them in last year earlier, but were prevented by the long continued rains of April, and the early part of May, and would now advise every one who intends to plant, to do so as early as they can, as a few weeks in the ripening of the wood is a very important consideration.—*Balt. Farmer and Gardener.*

Polygonum Tinctorum.—The French are directing their attention to the cultivation of this plant as an article of agricultural produce, for the extraction of indigo, as a coloring matter, which answers equally as well. Considerable has been said about it in the French agricultural publications, and several experiments detailed, from which it appears that the plant will form as staple an article as the beet sugar, or the production of silk—two branches of agriculture, to which the French are devoting great attention.

In a late number of the *Annales d' Agriculture Francaise*, is a notice of the cultivation of the polygonum, from the pen of M. Farel, member of the agricultural society of Herault, and well known as a horticulturist. The writer has grown the plant since the year 1837, and with good success: last year he had

increased his stock of plants to three thousand. The polygonum is an annual, and is cultivated in beds, growing to the height of three or four feet. The plants were gathered in August and in September, and the writer has obtained as splendid indigo as was ever seen. The article is too long to be fully given. but M. Farel gives the following estimate of the product and nett profit of an acre:—

	FRANCS.
Cultivation of an acre of land,	600
Gathering of leaves, at two francs every hundred kilogrammes, on 80,000 kilogrammes an acre,	1,600
Labor, for obtaining the fecula, at 2 francs the 100 kilogrammes of fresh leaves,	1,600
Expense per acre,	3,800
Product of indigo, of one-half for 100 on 800 quintals of leaves—400 kilogrammes at 14 francs per kilogramme,	5,600
Gain per acre,	1,800

Equal to nearly $100 per acre. This estimate, owing to the price of labor, &c. is not a sure guide to the growth of the plant in this country; but we hope some of our enterprising agriculturists will try experiments to test its value.—*Horticultural Journal.*

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Paper.—Paper, when bleached, if the chloride be not removed, or permanently neutralized, produce effects of the most disastrous kind, and oftentimes where the cause is little suspected. The delicate blossom of plants folded up in our herbaria lose their colors; colored silks, especially delicate tints, as violet, mazarine blue, lilac, &c. becomes eventually blanched when wrapped up in white paper. A silk manufacturer once bitterly complained to me of the loss he sustained from the difficulty in preserving colored silks. I bade him use any paper but *white* paper, and the evil was cured. The manufactures of paper hangings and stained paper had lost hundreds, if not thousands of pounds, before the cause was discovered. Gilt buttons, to the amount of two or three hundred pounds, have been returned unsaleable to the manufacturer, because folded up in white paper—chloride having the property of acting chemically on gold, and forming a chloride of that metal. It is easy to see what would be the effect of allowing delicate colored silks, muslins, &c. to remain in boxes or a chest of drawers lined with similar paper. It might be supposed that the chloride of lime employed to bleach the half stuff, or the paper pulp, was ruinous enough, but in this inference we should be mistaken; to complete the work of destruction, some paper, after it is entirely manufactured, must be bleached by being exposed to the nascent gas: such paper is called by the trade "doctored." The typographer, lithographer, engraver, all complain of the difficulty of "working" particular kinds of paper, and the shreds of the wool and hair will also sometimes perplex them. I have been informed that, with some paper not more than a hundred impressions can be taken by the lithographer, before the impression on the stone is almost destroyed, while with the best qualities of paper some thousands of copies may be obtained before it is sensibly altered.—*Muray's Phormium Tenax.*

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Curing Hams.—I beg leave to present to the public my manner of preserving hams. I turn my barrel over a pan or kettle, in which I burn hard wood for seven or eight days; keeping a little water on the head of the barrel, to prevent it from dying. I then pack two hundred weight of ham in my barrel, and prepare a pickle by putting six gallons of water in a boiler, with twelve pounds of salt, twelve ounces of saltpetre, and two quarts of molasses. This I stir sufficiently to dissolve the salt, &c., and let it boil and skim it. I then let it cool and pour it on my ham, and in one week I have smoked ham, very tender of an excellent flavor, and well smoked. When the weather becomes warm, there will be a scum rise on the pickle. By keeping my ham under pickle, it will keep the year round.

It is better to have a good white oak barrel than any other. Try it, and if you ever had meat smoked earlier after killing, and more palatable, please inform the public through the columns of your paper. H. FOWLER.

Hanover, Mich, March 7, 1839.

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Pumpkin Sugar.—It is stated on good authority that an important revolution is about occurring in France in regard to the manufacture of sugar; and that a large capitalist is about erecting an extensive establishment for the manufacture of sugar from pumpkins, experiments having shown conclusively that it may be obtained from this vegetable in abundance, and of a superior quality.

Debts of the several States, from the Report of A. C. Flagg, Comptroller of the State of New. York.

New-York,	$18,262,406
Pennsylvania,	27,306,790
Massachusetts,	4,290,000
Maine,	554,976
Maryland,	11,492,980
Virginia,	6,662,180
South-Carolina,	5,753,770
Ohio,	5,101,000
Kentucky,	7,369,000
Illinois,	11,600,000
Indiana,	11,890,000
Tennessee,	7,148,175
Alabama,	10,800,000
Missouri,	2,500,000
Mississippi,	7,000,000
Louisiana,	23,735,000
Arkansas,	3,000,000
Michigan,	5,340,000
Total,	$170,806,177
Add, due by the States to the United States,	28,101,644
	$198,907,821

The State debts have been incurred for the following objects:

For Banking,	$72,640,000
For Canals,	30,201,551
For Rail Roads,	48,871,084
For Turnpike and M'Adam Roads,	6,618,951
For Miscellaneous objects,	8,474,684

Note.—Judge Buel, of Albany, has recently published an able article against the State Debt System, shewing that the Legislative office holders of eighteen of the States have run their constituents in debt to the amount of $170,806,177, and that the people are now paying ten millions annually as interest, "not to members of our national family, but to foreigners, who are at least aliens to our country, if not secretly hostile to its institutions and prosperity."

"The rapid accumulation of debt, within the last few years, cannot but strike the reader with astonishment; and if it is considered that the State of New-York is already pledged to the amount of twenty or thirty millions, beyond her present debt, to complete internal improvements already authorized; and that some of these improvements are not likely for a long time to come, if ever, to pay for repairs, attendance, and the interest on the capital loaned—we say, when these matters are duly considered, it will require no argument of ours to show that we are hastening to a dangerous crisis.—*New-York paper.*

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Hint to Breeders of Swine.—In an essay on the Reproduction of Domestic Animals, by M. Giron, furnished for the French work 'Annals of the Natural Sciences,' the writer enters into an explanation of some of the causes that govern the respective numbers of sex, particularly in the Swine. He contends, that among female animals that receive the male only once, those that receive him first, gererally produce more males than females. In proof of this position, he adduces, among many other cases, the following instances:

"A boar was admitted to two sows of two years old, of the same strength, and on the same day and the issue of the same litter: the first produced nine males and a female, the last nine females and one male. A young boar of five months old, was admitted to two sows of the same litter as the boar; the one which first received him produced five males and two females; and the other, four hours later, six females and two males."

If further observation should verify the correctness of this position; and the rule be applicable to other animals as well as swine, an attention to it by breeders of cattle and horses, might be of considerable consequence to them. We recommend this hint to the observation of breeders.

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Go slowly to the entertainments of thy friends, but quickly to their misfortunes.

Feeding and Fattening Fowls.—Fowls will become fat on the common run of the farm yard, where they thrive upon the offals of the stable, and other refuse, with perhaps some small regular daily foods; but at threshing time they become particular fat, and are thence styled barn-door fowls, probably the most delicate and highly flavored of all others, both from their full allowance of the first grain, and the constant health in which they are kept by living in a natural state, and having the full enjoyment of air and exercise. It is a common practice with some housewives to coop their barn door fowls for a week or two, under the notion of improving them for the table, and increasing their fat; a practice which, however, seldom succeeds, since the fowls generally pine for the loss of their liberty, and slighting their food, lose instead of gaining, additional flesh. Such a period, in fact, is too short for them to become accustomed to confinement.—*Franklin Farmer.*

Potato Soap for Washing.—It was discovered by a French chemist, many year ago, that potatoes only three parts boiled, make better soap for washing than the troublesome, caustic, and expensive article usually made use of by wash women. They make the cloths cleaner and that without injury. Let me give you the result of the experience of my family, which is a large one.

The soiled clothes are first soaked in a tub of water about an hour. They are then transferred to a copper kettle of hot water; from which they are taken piece by piece, to be thoroughly rubbed with the potatoes, the same as with soap. The whole thus prepared, after having been well rubbed, rolled and rung, are a second time plunged into the copper, together with a quantity of the potatoes in the above state. After boiling for about half an hour, the linen and cloths are taken out—turned, thoroughly rubbed all over, and wrung; and afterwards again thrown into tne copper for some minutes. The clothes are then rinsed in clean cold water. and hung up to dry: the whole process occupies two hour and a half.

The linen thus washed, is perfectly clean, the kitchen garments free from all grease, and perfectly sweet, though in the old way they usually retain a greasy smell.—*Newark Sentinal.*

Currant Wine.—One of the best fruits in the world is the currant. It will flourish in almost any situation. The shrub is sure to bear whether it is cultiuated or not, though the quantity of fruit is always in proportion to the attention bestowed. When fully ripe, it is a good article for the dessert; a jelly made from it is pleasant and agreeable to the palate, and is, besides, said to be very useful in inflammation of the throat. But perhaps the most important use which currants can be applied is that of making wine. This, when properly made and carefully managed, is a most excellent article, superior to much of the wine sold as imported, and can be manufactured at small expense—the entire cost not exceeding fifty cents per gallon. The quantity which might be made from an acre, is computed at no less than three hundred and twenty gallons, estimating two gallons per rod. In speaking of the quality of this wine, a connoisseur has said, that "while it is much above the infertor imported wines, it has none of the deleterious properties of the manufactured compounds."

We have several times made wine, which all who tasted it pronounced excellent, by the following receipt.

To each gallon of clear currant juice add two gallons of water, and to each gallon of the mixture add three and a half pounds of good brown sugar, and put into good barrels. After it has done fermenting, it should be bunged tight for two or three weeks, when it should be racked off the lees and put into clean, strong casks. If you wish to give it more body, add to each barrel after it has been racked off, one gallon of the best brandy.—*Zanesville Gaz.*

To Correct Damaged Grain.—Musty grain, totally unfit for use, and which can scarcely be ground, may, it is said, be rendered perfectly sweet and sound by immersing it in boiling water, and letting it remain until the water becomes cold. The quantity of water must be double to that of the grain to be purified. The musty quality rarely penetrates through the husk or bran of the wheat. In the hot water, all the decayed or rotten grains swim upon the surface, so that the remaining wheat is effectually cleansed from all impurities, without any material loss. It is afterwards to be dried, stirring occasionally on the kiln.—*N. E. Farmer.*